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BUREAU OF UNDERGROUND  
STORAGE TANKS

Letter of Transmittal

Date January 29, 1998  
File Number 94039.00 Task 1  
From Marjorie Piette *MAJ*

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To New Jersey Department of Environmental Protection  
BEECRA, P.O. Box 432  
401 East State Street, Trenton, NJ 08625  
Attention Mr. Joseph Nowak  
Copy to A. William Nosil; Edward Hogan, Esq.  
(w/o Laboratory Reports)  
Subject Hexcel Facility, Lodi, NJ

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Copies	Date	Description
3	Jan-28, 1998	Hexcel Progress Report
1	Nov-5, 1997	Analytical Data Report Package (ICM Laboratories, Inc.)
1	Oct-24, 1997	Grain Size Distribution Test Report (Converse Consultants East)

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Remarks



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28 January 1998  
File No. 94039.00 T1

New Jersey Department of Environmental Protection  
Bureau of Environmental Evaluation and Cleanup Responsibility Assessment  
P.O. Box 432  
401 East State Street  
Trenton, NJ 08625

Attention: Joseph J. Nowak  
  
Subject: Hexcel Corporation  
Lodi Borough, Bergen County, New Jersey  
ISRA Case No. 86009

Dear Mr. Nowak:

On behalf of Hexcel Corporation (Hexcel), the following is the progress report of activities carried out during October, November and December of 1997. This quarterly report is prepared in accordance with the Industrial Site Recovery Act (ISRA) requirements for the former Hexcel facility in Lodi, New Jersey.

The following topics are discussed in this progress report:

**OFFICES**

Boston  
Massachusetts

Cleveland  
Ohio

Denver  
Colorado

Hartford  
Connecticut

Los Angeles  
California

Manchester  
New Hampshire

Portland  
Maine

Rochester  
New York

San Diego  
California

San Francisco  
California

Washington  
District of Columbia

1. Ground Water/DNAPL/LNAPL Monitoring
  - a) Quarterly Monitoring
  - b) Monthly Monitoring
2. Product Recovery Program
  - a) DNAPL Recovery
  - b) LNAPL Recovery
3. Installation of Replacement Monitoring Well
4. Borings in the Vicinity of Monitoring Well MW-1
5. Off-Site Investigation
6. Sediment Sampling
7. Ground Water Treatment System
8. Waste Disposal Documentation
9. Schedule and Cost Estimates

## **1. Ground Water/DNAPL/LNAPL Monitoring**

This section includes the results of quarterly monitoring performed in October 1997 and monthly monitoring performed in November and December 1997. Modifications to the NJDEP-approved "Groundwater/DNAPL/LNAPL Monitoring Plan" prepared by Killam Associates were presented in our progress report dated 24 October 1994. The modifications were approved by the NJDEP in its 12 June 1995 letter. Sections 1a and 1b provide details for quarterly and monthly monitoring, respectively.

### **1a. Quarterly Monitoring**

Hexcel conducted quarterly ground water elevation, DNAPL and LNAPL monitoring on 24 October 1997, in accordance with the monitoring plan. Results of the quarterly monitoring are tabulated in Table I. Figures 1 and 2 illustrate shallow and deep ground water elevation contours, respectively. Contour Map Reporting Forms are included for each of the contour maps. Table II contains a summary of well construction data to accompany the Contour Map Reporting Form for Figure 1. Tables I and II, Figures 1 and 2 and the contour map reporting forms are included as Appendix A.

### **1b. Monthly Monitoring**

In addition to the quarterly monitoring conducted in October, Hexcel conducted monthly DNAPL and LNAPL monitoring on 25 November and 22 December 1997, in accordance with the monitoring plan and modifications approved by the NJDEP in its 12 June 1995 letter. There were no modifications to the monthly monitoring plan in the fourth quarter of 1997.

Results for the October and November monthly monitoring are provided in Table III and Table IV respectively, located in Appendix B.

Hexcel will continue to perform monthly monitoring in accordance with the approved plan. Hexcel will report any modification to the monthly monitoring, by the addition and deletion of wells, in the progress reports.

## **2. Product Recovery Program**

This section includes results for the temporary product recovery program currently being implemented at the site. The product recovery program, performed on a weekly basis, was initiated on 20 October 1994, and consists of recovering product from affected wells. During the early stages of the program, bailers were used to recover product. Presently, most wells have been equipped with tubing that can be connected to peristaltic pumps that help recover the product. After one month, the program's frequency was reduced to twice a month due to a reduction in the quantity of product recovered. Product recovery continued at the rate of at least twice a month through the week of 19 June 1995. In accordance with the NJDEP's 12 June 1995 letter, weekly product recovery was resumed the week of 26 June 1995.

In its 23 May 1996 letter, the NJDEP approved modifications to the weekly product recovery program for LNAPL and DNAPL. The modifications proposed by Hexcel changed the criteria for inclusion of wells in the weekly product recovery program. The modifications were communicated to the NJDEP in a letter dated 21 September 1995 and also in the October 1995 progress report. According to the modifications, any well which has no measurable recovery for three consecutive weekly recovery rounds will be moved to monthly monitoring and recovery. For the purposes of product collection, quantities greater than 0.1 gallon (approximately 1 cup) are considered to be measurable. Based on our experience, if the product interface meter does not signal the presence of product, then it is not possible to pump a significant amount of DNAPL from the well, even when DNAPL is observed on the probe. Therefore, DNAPL recovery is usually attempted only when there is a signal from the product interface meter indicating the presence of product.

#### **2a. DNAPL Recovery**

During the fourth quarter of 1997, DNAPL was recovered once from monitoring well MW-6. None of the other wells indicated presence of recoverable amounts of DNAPL. Product recovery was attempted every time the product interface probe indicated measurable product. Approximately 0.1 gallons of DNAPL was recovered from MW-6 during the fourth quarter of 1997. DNAPL recovery during this quarter is summarized in Table V, located in Appendix C.

#### **2b. LNAPL Recovery**

Presence of recoverable amounts of LNAPL were indicated in MW-6 during the monthly monitoring in November and 0.2 gallons of LNAPL was recovered. Monitoring for four additional weeks, till the end of December, did not indicate further recoverable product. LNAPL recovery is summarized in Table VI, located in Appendix C.

### **3. Installation of Replacement Monitoring Well**

Monitoring well MW-32 was damaged during snow plow activities in January 1996. Subsequently, the well was abandoned by a licensed driller on 29 March 1997. In response to an NJDEP request, a replacement well was installed adjacent to the location of MW-32 on 18 November 1997 by Summit Drilling. This well is identified as MW-32B (Figure 3) and the well construction details are included in Appendix D.

### **4. Borings in the Vicinity of Monitoring Well MW-1**

A subsurface investigation was conducted in the area of MW-1 to estimate the interval over which to screen a well to be installed on top of bedrock. During this investigation, four borings (B-1, B-2, B-3, and B-4) were advanced. The boring locations are shown in Figure 3 (Appendix D) and the boring logs are included as Appendix E.

Evidence of bedrock (refusal) was encountered at boring B-4 at a depth of 17 feet below ground surface. This was below a medium dense silt layer with some sand, similar in

character to the confining layer at the site, that was encountered at a depth of approximately 10 feet. To verify that bedrock had been encountered, an additional boring was advanced by a hollow stem auger. No split spoon samples were collected during this boring and refusal was encountered at an approximate depth of 22 feet below ground surface.

Based upon the borings, a well was not installed in the area of MW-1. According to the well construction details for MW-1, the screened interval of this well is 15 to 20 feet below ground surface. Furthermore, evidence of bedrock was encountered at this location at approximately 17 to 22 feet below ground surface. Based upon this information, it appears that MW-1 is screened just above bedrock. Thus, an additional well installed on top of bedrock is not warranted at this time. Hexcel will wait for additional regional information before conducting further work in this area.

### **5. Off-Site Investigation**

We have completed evaluation of the information obtained from the U.S. Army Corps of Engineers (Army Corps) regarding their well across the Saddle River from the Hexcel site together with our measurements and survey of this well. We gained access to the well on October 28, 1997. Upon our arrival at the well location, we observed that the manhole cover had been ripped off the well and the top of the PVC casing was broken. We had previously reported to the NJDEP that a roll-off had been covering the well. We were advised by the property owner's representative that the surface protection was damaged the same day when the roll-off was dragged off the well to make the well accessible. We were able to put the PVC well-cap back on and lock the well when we departed from the off-site location.

We surveyed the ground surface elevation at the Army Corps well location, measured the depth to water and depth to bottom in the well, checked for presence of product and took measurements to locate the well on a scaled map. Below we discuss the issues related to the off-site investigation across the Saddle River from the Hexcel site.

NJDEP, in its letter dated 23 May 1996, requested the following additional information:

- i) Submission of a scaled map of the locations of the wells at the Hexcel site that contain DNAPL, the location of the Army Corps well MW08 and location of the Saddle River:

This information is provided in Figure 4 (Appendix F).

- ii) Construction specifications of MW08, specifically the screen placement with respect to the confining layer:

Based on the information provided by the Army Corps and measurements of depth to bottom of the well, it appears that MW08, which has a 10-foot screen, is screened in the shallow aquifer and into the confining layer. The screen is 6 feet in the shallow formation and 4 feet into the confining layer. This screen placement would be appropriate to detect presence of DNAPL, if any were present, at this location. The soil boring log provided

by the Army corps for this well had been submitted to the NJDEP in the October 1995 progress report and is also included as Appendix F in this report.

- iii) Comparison in the form of cross-sectional diagram of the elevation of clay at Army Corps MW08 to the elevation of clay encountered in Hexcel wells and the elevation of Saddle River Channel:

The range of elevation of the confining layer at the Hexcel site along the Saddle River, based on well logs from MW-10, CW-12, CW-16 and MW-8, is 13'-13.5'. The relative elevation of the confining layer at MW08, based on the evaluation of information for the Army Corps well, is 13.7 feet. The channel bottom elevation<sup>1</sup> for the Saddle River at this location is 15 feet across from MW-8 sloping downward slightly to 14.5 feet across from MW-10. The above information is presented in the form of a cross-sectional diagram in Figure 5 (Appendix F).

The information presented above indicates that Army Corps well MW08 is appropriately located and constructed to detect DNAPL if it had migrated off-site across the Saddle River. The Army Corps investigation which included extensive chemical testing data from MW08 had indicated that no DNAPL had been detected in this well and no volatile organics, semi-volatile organics and PCBs were detected above regulatory concern. Our observations on 28 October 1997 did not indicate presence of DNAPL in this well. NJDEP, in its 23 May 1996 letter, had advised Hexcel that before NJDEP can agree that the Army Corps investigation satisfies the off-site investigation requirements, Hexcel shall demonstrate that the DNAPL, observed at Hexcel wells, could be expected to appear at MW08. The information presented above demonstrates that the location of MW08 satisfies the NJDEP's off-site delineation requirements across the Saddle River.

## 6. Sediment Sampling

Stream sediment was sampled from the Saddle River in the vicinity of the sewer outfall pipe to which the Hexcel storm sewer system is believed to be connected. The sediment samples were collected in order to evaluate whether discharge from the outfall may have deposited PCBs in the river sediment. The sampling results were also compared with results of previous sediment sampling by others from farther upstream and downstream of the sewer outfall. Results of both recent and past sampling indicate the presence of PCBs in sediments both upstream of the Hexcel site and downstream of the storm sewer outfall.

PCBs were detected in sediments downstream of the storm sewer outfall; however, previous sampling by others indicate that PCBs are present in sediments of the Saddle River both upstream and downstream of the storm sewer outfall. Sediment samples collected from the Saddle River at distances within approximately one mile upstream and downstream of the outfall indicated PCBs concentrations similar to many of the samples collected in the vicinity

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<sup>1</sup> Information based on Plate No. 2 *Delineation of Floodway and Flood Hazard Area, Saddle River, Sta. 72+00 To Sta. 144+00*, Borough of Lodi, City of Garfield, Bergen County, New Jersey, Division of Water Resources, NJDEP, February 1986.

of the storm sewer outfall during this study (Figure 6, Appendix G). The previous sampling results indicate that PCBs are present in the Saddle River sediments as a result of unspecified sources. Therefore, it is not clear whether PCBs detected in the sediments sampled at the storm sewer outfall resulted from discharge from the outfall or possibly resulted from discharges by unspecified upstream sources.

Determination of the source of sediment collected along the Saddle River south of Route 46 is difficult due to the complexity of depositional processes affected by flow characteristics and the shape of the river channel. In this area, the Saddle River is prone to significant flooding events that would likely redistribute sediments from upstream locations. Such flooding events have been documented by the U.S. Army Corps of Engineers in a flood-protection study completed in 1984 (*Interim Report on Flood Protection Feasibility Lower Saddle River*, by the U.S. Army Corps of Engineers, dated August 1984). Localized depositional environments, such as those targeted during the sediment sampling, would likely have been affected by deposition from upstream sources following periods of heavy stream flow. Additionally, historical stream flow and sedimentation were affected by a dam previously located in this area of the Saddle River. Therefore, sediment samples collected from these depositional environments may not be characteristic of local discharge areas, but rather might represent sediments initially deposited in upstream locations.

#### **Sampling Locations and Observations**

Fourteen sediment samples were collected from seven locations within depositional areas along the eastern bank of the Saddle River in the vicinity of the storm sewer outfall on 10 October 1997 (Figure 6, Appendix G). The sample locations were characterized by localized bars of accumulated coarse to fine sand with minor silt and gravel. The sediment appears to extend to about one foot depth at locations where the samples were collected. Below this depth, the stream bed was observed to be generally more resistant to augering, likely indicating natural soil underlying the river bed.

Four sampling locations were selected downstream from the outfall (S-1 through S-4), and three sampling locations were selected upstream from the outfall (S-5 through S-7). At each location, samples were collected from a shallow interval (0 to 6 inches depth) and a deeper interval (6 to 12 inches depth). No additional outfall pipes were observed between the storm sewer outfall and the furthest downstream sample (S-1), although various debris was observed along this stretch of the stream.

The outfall that was evaluated by the sediment sampling was a corrugated metal pipe with a diameter of approximately 54 inches. It is located approximately 600 to 650 feet downstream of the former Hexcel facility along the eastern bank of the Saddle River. The storm sewer passes beneath the Napp Technologies (Napp) facility as well as other properties south of Napp along its course from the former Hexcel facility to its outfall at the Saddle River. It is not known what facilities are currently or were in the past connected to the storm sewer. The outfall is situated adjacent to two steel pipes which extend from a concrete wall approximately 30 feet east of the river bank. As the two steel pipes approach the river bank, they bend nearly 90 degrees and extend below the ground surface. These two steel pipes are likely

conduits leading from the Hendricks' pumping station, which in the past received industrial sewer discharge from the surrounding area, including the former Hexcel facility, to the Passaic Valley Sewerage Commissioners treatment plant.

Various debris and a localized sheen was observed along the stream in the vicinity of the storm sewer outfall located adjacent to the Hendricks' pump station. The debris included junked metallic appliances, bricks and blocks, plastic tarps and general discarded material. The source of the debris is not known. Additionally, a localized sheen was observed on the stream water surface during sample collection downstream of the outfall. A sheen was also observed on the stream water surface at a later date in the vicinity of the outfall. The source of the sheens is not known.

### **Sampling Methods**

Samples were collected using standard field sampling equipment, in conformance with the NJDEP Field Sampling Procedures Guide (NJDEP, May 1992). Specifically, samples were collected beginning with downstream locations and approaching the outfall in the upstream direction, then passing the outfall to sample locations upstream of the outfall. Samples were collected by advancing a 3.25-inch-diameter stainless steel hand auger into the shallow sediments. The auger provided effective coring and recovery, and it allowed collection of samples from depths of 0 to 6 inches and 6 to 12 inches. Samples were transferred directly to laboratory-supplied sampling bottles for the PCBs and TOC analysis, and bulk samples weighing about five pounds each were collected for grain size analysis by sieve testing and hydrometer testing. Laboratory testing results of PCBs and TOC analyses are provided in Table VII of Appendix G, and the sieve testing results are also provided in Appendix G. The laboratory data packages are provided as separate volumes. Equipment was decontaminated between each sampling event, and a field blank was completed by passing the field blank water over a decontaminated auger bucket and pouring the water directly into the field blank bottle.

### **Testing Results**

Of the seven sample locations, S-1 through S-7, all of the samples collected downstream of the sewer outfall indicated PCBs, and all of the samples collected upstream of the outfall indicated non-detect results for PCBs (Figure 6, Appendix G and Table VII). With one exception, location S-3, the results of the deeper sediments, collected from 6 to 12 inches depth, indicate significantly higher concentrations of PCBs than shallow sediments from the same location.

The testing results were compared to the applicable sediment quality criteria used by the NJDEP for assessing fresh water sediment contamination (*Guidelines for the Protection and Management of Aquatic Sediment Quality in Ontario*, by the Ontario Ministry of Environment and Energy, August 1993). This comparison is provided in Table VIII, Appendix G. The testing results indicate that sediment located as far downstream as sample S-1 (125 feet downstream of the outfall) exceed the sediment criteria for PCBs. Based on the sediment



criteria, the PCBs concentrations of the samples were above the level at which the criteria predict that the sediment contamination would potentially affect sediment-dwelling organisms.

#### Sediment Sampling by Others

Sediment along the Saddle River has been sampled by others on several occasions for various purposes. In December 1983, the U.S. Army Corps of Engineers conducted sediment sampling at twelve locations (Site #1 through Site #12) along the Saddle River and its tributary stream, Sprout Brook, between the vicinity of Route 4 near Fair Lawn, New Jersey and the confluence of the Saddle River and the Passaic River near South Hackensack, New Jersey. The sample locations and results were provided in the report entitled *Interim Report on Flood Protection Feasibility Lower Saddle River*, by the U.S. Army Corps of Engineers, dated August 1984 (Figure 8 of Section VII, Final Environmental Impact Statement). A copy of the sample location figure is included in Appendix G of this progress report, and testing results for samples, Site 1 through Site 8 included in Table VII of this report. In June 1987, Environ collected sediment sample SDSR-SS01 from sediment at the sewer outfall adjacent to the Hendricks' pump station and sample SDSR-SS02 from sediments located approximately 20 feet further downstream (Figure 6, Appendix G). ENSR collected two sediment samples in April 1995 (SED-UP and SED-DOWN) and three sediment samples in September 1996 (P-1 through P-3). The ENSR sample locations, depicted in Figure 6 in Appendix G of this progress report, were within approximately 600 feet upstream and downstream of the Napp facility storm sewer outfall, which is a different outfall located upstream of the sewer outfall that is adjacent to the Hendricks' pump station. The stream sediment testing results are included in Table VII of this progress report and are discussed below. Additionally, PCBs were among the compounds detected in sediment removed by ENSR from the Napp facility storm sewer in April 1996 (Sample STD-DR-1, indicating PCBs concentration of 2200  $\mu\text{g/Kg}$ , reported in June 1997 Napp RIR).

Reports of depths of samples collected by others indicate that the samples were collected from the surface of the stream bed. Samples collected by ENSR (SED-UP, SED-DOWN and P-1 through P-3) were reported as collected from 0 to 6 inches depth. Samples collected by the U.S. Army Corps of Engineers (Site #1 through Site #12) were reported as stream "bottom sediment", suggesting that they were surficial sediments. These samples were collected from depths similar to the shallow samples collected by Haley & Aldrich at locations S-1 through S-7.

The sediment samples collected by others are comparable to the shallow sediment samples collected by Haley & Aldrich from locations S-1 through S-7. Based on the PCBs concentrations indicated by the shallow samples S-1 through S-7, it appears that shallow sediments collected from 0 to 6 inches depth record lower concentrations than deeper sediments collected from 6 to 12 inches depth. Therefore, the surficial samples collected by others indicate sediment concentrations comparable to the samples collected from 0 to 6 inches depth at locations S-1 through S-7. Unfortunately, it does not appear that samples collected by Environ, ENSR and U.S. Army Corps of Engineers included deeper sediment from 6 to 12 inches depth, which based on PCBs distribution of samples collected from

locations S-1 through S-7, may have provided important information concerning PCBs concentrations at depth.

PCBs have been detected in surficial sediments located upstream of the storm sewer outfall that is adjacent to the Hendricks' pump station in concentrations similar to those indicated by downstream samples collected from locations S-1 through S-4 (Table VII). Sediment collected at Site #5 indicated PCBs concentration of 40  $\mu\text{g/Kg}$ . This sample location is within approximately one-half mile upstream of the storm sewer outfall. Two additional sediment samples collected at Site #7 and Site #8 indicated PCBs concentrations of 110  $\mu\text{g/Kg}$  and 210  $\mu\text{g/Kg}$ . These samples are located within approximately 1.8 miles upstream of the storm sewer outfall. Sample SED-UP, located approximately 1200 feet upstream from the storm sewer outfall, indicated PCBs concentration of 200  $\mu\text{g/Kg}$ . Sample P-1, located approximately 670 feet upstream from the storm sewer outfall, indicated PCBs concentration of 160  $\mu\text{g/Kg}$ .

Surficial sediment samples collected downstream of the storm sewer outfall indicate PCBs concentrations similar to surficial sediment samples S-1 through S-4, which range from 47  $\mu\text{g/Kg}$  to 2700  $\mu\text{g/Kg}$ . Samples SDSR-SS01 and SDSR-SS02 indicate PCBs concentrations of 300  $\mu\text{g/Kg}$  and 2400  $\mu\text{g/Kg}$ , respectively. Samples collected further downstream by the U.S. Army Corps of Engineers indicate PCBs concentrations ranging from 20  $\mu\text{g/Kg}$  to 370  $\mu\text{g/Kg}$ . Of these samples, Site #4, indicating PCBs concentration of 80  $\mu\text{g/Kg}$ , is located within one-half mile of the storm sewer outfall and sample Site #3, indicating PCBs concentration of 370  $\mu\text{g/Kg}$ , is located within one-mile of the storm sewer outfall.

### Summary

The sediment testing results indicate the following:

- i) The sources of PCBs in the sediment located in the vicinity of the storm sewer outfall have not been determined. It is possible that the storm sewer outfall is one source.
- ii) The depositional history of this area is not well understood, and it has likely been affected by redeposition of sediment from upstream locations during flood events. Also, depositional environments in the past were likely different than those observed at the current time due to a dam that was in the past located along this part of the river. The past effects of this dam are not clear at the current time.
- iii) PCBs-contaminated sediments are not an uncommon occurrence in this part of the Saddle River which runs through industrial areas. PCBs have been detected in surficial sediments collected by others from locations upstream and downstream of the storm sewer outfall. PCBs concentrations of these sediments are comparable to those observed in samples S-1 through S-4, suggesting that additional unspecified sources of PCBs may have contributed to the PCBs observed in the vicinity of the storm sewer outfall.

- iv) The Ontario sediment criteria categorize the concentrations of PCBs in most of the downstream samples S-1 through S-4 as "potentially harmful to sediment-dwelling organisms".

### **Recommendations**

While there is ongoing discussion of a regional approach to the area's environmental issues, Hexcel will defer consideration of the need for additional investigation of the stream sediments. Evaluation of the sediment sampling results is complicated by the likelihood of additional unspecified sources of PCBs which may have affected the stream sediment.

### **7. Ground Water Treatment System**

Ground water as basement seepage water continues to be treated on-site and discharged to the Passaic Valley Sewerage Commissioners (PVSC) sewer line. This continues to depress the ground water in this area allowing for the recovery of contaminated ground water in the vicinity of the basement.

### **8. Waste Disposal Documentation**

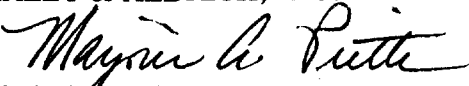
There were no disposal activities in the fourth quarter of 1997. Therefore, there is no waste disposal documentation to be submitted with this progress report.

### **9. Schedule and Cost Estimates**

Table IX located in Appendix H presents an updated estimate of the schedule of remaining remedial activities. There has been no change to date in the estimate of cleanup costs.

We will continue to submit quarterly progress reports according to the schedule. Please call us if you have any questions regarding the above.

Sincerely yours,  
HALEY & ALDRICH, INC.

  
Marjorie A. Piette  
Project Manager

Enclosures

c: A. William Nosil  
Edward Hogan, Esq.

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## **Appendix A**

### **Quarterly Monitoring**

**Table I: Quarterly Water Level/Product Thickness Measurements (10/24/97)**

**Table II: Well Construction Data**

**Contour Map Reporting Form for Figure 1**

**Figure 1: Shallow Ground Water Elevation Contours on 10/24/97**

**Contour Map Reporting Form for Figure 2**

**Figure 2: Deep Ground Water Elevation Contours on 10/24/97**

**TABLE I**  
**QUARTERLY WATER LEVEL/PRODUCT THICKNESS MEASUREMENTS (10/24/97)**  
**HEXCEL FACILITY**  
**LODI, NEW JERSEY**

-All measurements in feet -  
 -All elevations in feet (NGVD)-

Well ID	Type	Depth to Water (10/24/97)	Depth to Product		Product Thickness	Depth to Bottom (10/24/97)	Elevation Top of Casing	Water Elevation	Well Construction		Comments
			DNAPL	LNAPL					Type	Casing	
RW Series:											
RW1-1	shallow	5.88	--	--	--	14.30	28.24	22.36	flush	s.steel	
RW6-1	shallow	3.75	--	--	--	13.94	28.84	25.09	flush	s.steel	Product on probe (DNAPL)**.
RW6-2	shallow	3.96	--	--	--	14.81	29.34	25.38	flush	s.steel	
RW6-3	shallow	4.21	--	--	--	5.44	28.72	24.51	flush	s.steel	
RW7-1	shallow	6.38	--	--	--	16.56	26.25	19.87	flush	s.steel	Product on probe (DNAPL)**.
RW7-2	shallow	6.85	--	--	--	16.86	26.48	19.63	flush	s.steel	Sediment on probe.
RW7-3	shallow	7.10	--	--	--	17.29	26.78	19.68	flush	s.steel	
RW7-4	shallow	7.42	--	--	--	19.06	27.11	19.69	flush	s.steel	Product on probe (DNAPL)**.
RW7-5	shallow	8.02	--	--	--	19.08	27.57	19.55	flush	s.steel	
RW7-6	shallow	7.50	--	--	--	14.98	26.48	18.98	flush	s.steel	
RW7-7	shallow	7.47	--	--	--	14.87	26.89	19.42	flush	s.steel	Sediment on probe.
RW7-8	shallow	9.04	--	--	--	14.95	25.90	16.86	flush	s.steel	
RW7-9	shallow	7.58	--	--	--	16.17	26.87	19.29	flush	s.steel	
RW7-10	shallow	7.76	--	--	--	14.19	26.10	18.34	flush	s.steel	Sediment on probe
RW15-1	shallow	8.00	--	--	--	14.88	29.95	21.95	flush	s.steel	Sediment on probe.
RW15-2	shallow						30.15		flush	s.steel	Well not included in quarterly monitoring plan.

**TABLE I**

QUARTERLY WATER LEVEL/PRODUCT THICKNESS MEASUREMENTS (10/24/97)

HEXCEL FACILITY  
LODI, NEW JERSEY

-All measurements in feet -

-All elevations in feet (NGVD)-

Well ID	Type	Depth to Water (10/24/97)	Depth to Product		Product Thickness	Depth to Bottom (10/24/97)	Elevation Top of Casing	Water Elevation	Well Construction		Comments
			DNAPL	LNAPL					Type	Casing	
P Series:											
P-1	shallow	7.62	--	--	--	9.46	30.09	22.47	flush	1.5" pvc	
P-2	shallow	WA	--	--	--	WA	30.19	WA	flush	1.5" pvc	Well was sealed on March 29, 1996.
PI Series:											
PI-1	deep						26.90		flush	8" s.steel	Well not included in quarterly monitoring plan.
CW Series:											
CW-1	shallow	7.72	--	--	--	11.45	29.77	22.05	flush	s.steel	Sediment on probe.
CW-2	shallow						29.51		flush	s.steel	Well not included in quarterly monitoring plan.
CW-3	shallow						29.72		flush	s.steel	Recovery well; not included in monitoring plan.
CW-4	shallow	6.69	--	--	--	10.96	28.83	22.14	flush	s.steel	
CW-5	shallow						28.67		flush	s.steel	Recovery well; not included in monitoring plan.
CW-6	shallow						28.93		flush	s.steel	Well not included in quarterly monitoring plan.
CW-7	shallow	8.31	--	--	--	13.99	26.13	17.82	flush	s.steel	Product on probe (LNAPL) **.
CW-8	shallow	8.70	--	--	--	13.91	26.77	18.07	flush	s.steel	
CW-9	shallow						26.37		flush	s.steel	Recovery well; not included in monitoring plan.
CW-10	shallow	7.75	--	--	--	10.24	25.91	18.16	flush	s.steel	Sediment on probe.

**TABLE I**

QUARTERLY WATER LEVEL/PRODUCT THICKNESS MEASUREMENTS (10/24/97)

HEXCEL FACILITY

LODI, NEW JERSEY

-All measurements in feet -

-All elevations in feet (NGVD)-

Well ID	Type	Depth to Water (10/24/97)	Depth to Product		Product Thickness	Depth to Bottom (10/24/97)	Elevation Top of Casing	Water Elevation	Well Construction		Comments
			DNAPL	LNAPL					Type	Casing	
CW Series (continued):											
CW-11	shallow						25.74		vaultbox	s.steel	Recovery well; not included in monitoring plan.
CW-12	shallow	7.61	--	--	--	13.96	25.71	18.10	flush	s.steel	Product on probe ( DNAPL) **.
CW-13	shallow						26.05		flush	s.steel	Well not included in quarterly monitoring plan.
CW-14	shallow	8.30	--	--	--	13.86	26.37	18.07	flush	s.steel	Sediment on probe.
CW-15	shallow						26.31		flush	s.steel	Recovery well; not included in monitoring plan.
CW-16	shallow	8.40	--	--	--	13.93	26.45	18.05	flush	s.steel	Product on probe (DNAPL) **.
CW-17	shallow	7.54	--	--	--	13.94	26.25	18.71	flush	s.steel	Sediment on probe.
CW-18	shallow						26.61		flush	s.steel	Recovery well; not included in monitoring plan.
CW-19	shallow						26.50		flush	s.steel	Well not included in quarterly monitoring plan.
CW-20	shallow						26.74		flush	s.steel	Well not included in quarterly monitoring plan.
CW-21	shallow						26.77		flush	s.steel	Recovery well; not included in monitoring plan.
CW-22	shallow						26.35		flush	s.steel	Well not included in quarterly monitoring plan.
MW Series:											
MW-1	(a)	10.65	--	--	--	23.54	32.42	21.77	stickup	pvc	
MW-2	shallow	8.91	--	--	--	10.25	31.00	22.09	stickup	pvc	
MW-3	deep	11.18	--	--	--	30.76	31.13	19.95	stickup	pvc	
MW-4	shallow	8.36	--	--	--	9.90	32.33	23.97	stickup	pvc	
MW-5	deep	12.02	--	--	--	28.33	32.54	20.52	stickup	pvc	

**TABLE I**

QUARTERLY WATER LEVEL/PRODUCT THICKNESS MEASUREMENTS (10/24/97)

HEXCEL FACILITY

LODI, NEW JERSEY

-All measurements in feet -

-All elevations in feet (NGVD)-

Well ID	Type	Depth to Water (10/24/97)	Depth to Product		Product Thickness	Depth to Bottom (10/24/97)	Elevation Top of Casing	Water Elevation	Well Construction		Comments
			DNAPL	LNAPL					Type	Casing	
MW Series (continued):											
MW-6	shallow	10.69	--	--	--	18.34	30.74	20.05	stickup	pvc	Product on probe (DNAPL)**.
MW-7	deep	10.58	--	--	--	32.83	30.68	20.10	stickup	pvc	
MW-8	shallow	12.41	--	--	--	17.35	30.26	17.85	stickup	pvc	Product on probe (DNAPL)**.
MW-9	deep	9.76	--	--	--	29.58	29.83	20.07	stickup	pvc	
MW-10	shallow	12.85	--	--	--	16.76	30.83	17.98	stickup	pvc	
MW-11	deep	10.96	--	--	--	33.49	30.78	19.82	stickup	pvc	
MW-12	shallow	11.28	--	--	--	17.22	31.01	19.73	stickup	pvc	
MW-13	deep	10.62	--	--	--	33.21	31.16	20.54	stickup	pvc	
MW-14	shallow	11.94	--	--	--	15.59	30.70	18.76	stickup	pvc	
MW-15	deep	9.78	--	--	--	25.62	30.77	20.99	stickup	pvc	
MW-16	shallow	8.72	--	--	--	12.64	29.69	20.97	stickup	pvc	
MW-17	shallow	9.91	--	--	--	14.08	31.44	21.53	stickup	pvc	Sediment on probe.
MW-18	shallow	9.75	--	--	--	11.36	32.23	22.48	stickup	pvc	
MW-19	deep	7.91	--	--	--	26.59	29.08	21.17	stickup	pvc	
MW-20	shallow	5.56	--	--	--	20.05	27.95	22.39	flush	pvc	
MW-21	shallow	9.22	--	--	--	15.12	30.67	21.45	stickup	pvc	
MW-22	shallow	6.41	--	--	--	8.25	28.45	22.04	flush	pvc	
MW-23	shallow	5.38	--	--	--	9.58	27.51	22.13	flush	pvc	Sediment on probe.
MW-24	shallow	4.90	--	--	--	9.63	26.51	21.61	flush	pvc	
MW-25	shallow	7.79	--	--	--	12.73	26.03	18.24	flush	pvc	



TABLE I

## QUARTERLY WATER LEVEL/PRODUCT THICKNESS MEASUREMENTS (10/24/97)

HEXCEL FACILITY  
LODI, NEW JERSEY

-All measurements in feet -

-All elevations in feet (NGVD)-

Well ID	Type	Depth to Water (10/24/97)	Depth to Product		Product Thickness	Depth to Bottom (10/24/97)	Elevation Top of Casing	Water Elevation	Well Construction		Comments
			DNAPL	LNAPL					Type	Casing	
MW Series (continued):											
MW-26	(b)	8.18	--	--	--	17.93	28.85	20.67	flush	2" pvc	
MW-27	shallow	7.65	--	--	--	12.53	31.43	23.78	stickup	pvc	
MW-28	shallow	11.07	--	--	--	14.81	29.68	18.61	stickup	pvc	
MW-29	shallow	5.17	--	--	--	9.36	27.32	22.15	flush	pvc	Sediment on probe.
MW-30	shallow	5.89	--	--	--	10.49	28.08	22.19	flush	pvc	
MW-31	shallow	5.69	--	--	--	10.61	27.95	22.26	flush	pvc	Sediment on probe.
MW-32	shallow	WA				WA	32.51	WA	stickup	pvc	Well was sealed on March 29, 1996.
MW-33	shallow	10.31	--	--	--	16.93	31.72	21.41	stickup	pvc	Sediment on probe.
PB Series:											
PB-1	shallow	N/A	--	--	--	N/A	21.78	N/A	stickup	2" g.steel	Well filled with sediment.
PB-2	shallow	1.34	--	--	--	5.82	21.25	19.91	stickup	2" g.steel	Product on probe (DNAPL) * *; Sediment on probe.
PB-4	shallow	1.86	--	--	--	5.15	21.52	19.66	stickup	2" g.steel	

**NOTES:**

All measurements of depths are from the top of casing unless otherwise noted. All wells are 4" diameter unless otherwise noted.

--: Not detected by product interface meter.

N/A : Measurements not available.

(a): Ground water elevation data from MW-1 have been excluded from both shallow and deep aquifer contours; refer to Section 1a of the April 1996 Report for details.

(b): Ground water elevation data from MW-26 have been excluded from both shallow and deep aquifer contours; refer to Section 1a of the April 1996 Report for details.

WA: Well was sealed on March 29, 1996. Refer to April 1996 Progress Report for details.

\*: In wells with LNAPL, water levels are corrected using the equation: DTW (corrected) = DTW (measured) - (Product thickness \* specific gravity).

Specific gravity of 0.88 used for water level correction (petroleum lubricating oil).

\*\*: Though the product interface meter did not register presence of product in the well, product was observed on the probe.

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January 1998

**TABLE II**  
**WELL CONSTRUCTION DATA**  
**HEXCEL FACILITY**  
**LODI, NEW JERSEY**

-All measurements in feet -  
 -All elevations in feet (NGVD)-

Well ID	Type	Ground Elevation	Elevation Top of Casing	Length of Screen	Elevation Top of Screen	Depth to Water	Water Elevation	Well Construction		Installation		Water Table Elv. > Top of Screen Elv.
								Type	Casing	Date	By	
RW Series:												
RW1-1	shallow	28.67	28.24	10	23.67	5.88	22.36	flush	s.steel	10/91	Heritage	No
RW6-1	shallow	29.28	28.84	5	20.28	3.75	25.09	flush	s.steel	8/90	Heritage	Yes
RW6-2	shallow	U	29.34	5	U	3.96	25.38	flush	s.steel	8/90	Heritage	U
RW6-3	shallow	29.02	28.72	5	27.52	4.21	24.51	flush	s.steel	8/90	Heritage	No
RW7-1	shallow	26.94	26.25	5	13.94	6.38	19.87	flush	s.steel	8/90	Heritage	Yes
RW7-2	shallow	27.07	26.48	5	14.57	6.85	19.63	flush	s.steel	8/90	Heritage	Yes
RW7-3	shallow	27.17	26.78	5	14.67	7.10	19.68	flush	s.steel	8/90	Heritage	Yes
RW7-4	shallow	27.60	27.11	5	13.60	7.42	19.69	flush	s.steel	8/90	Heritage	Yes
RW7-5	shallow	27.97	27.57	5	12.97	8.02	19.55	flush	s.steel	9/90	Heritage	Yes
RW7-6	shallow	27.10	26.48	5	17.10	7.50	18.98	flush	s.steel	9/90	Heritage	Yes
RW7-7	shallow	27.25	26.89	5	17.25	7.47	19.42	flush	s.steel	9/90	Heritage	Yes
RW7-8	shallow	26.71	25.90	5	16.71	9.04	16.86	flush	s.steel	9/90	Heritage	Yes
RW7-9	shallow	27.18	26.87	5	15.18	7.58	19.29	flush	s.steel	2/91	Heritage	Yes
RW7-10	shallow	26.50	26.10	5	16.50	7.76	18.34	flush	s.steel	2/91	Heritage	Yes
RW15-1	shallow	30.43	29.95	10	25.68	8.00	21.95	flush	s.steel	8/90	Heritage	No
RW15-2	shallow	30.37	30.15	10	26.37			flush	s.steel	8/90	Heritage	NI

**TABLE II**  
**WELL CONSTRUCTION DATA**  
**HEXCEL FACILITY**  
**LODI, NEW JERSEY**

-All measurements in feet -  
 -All elevations in feet (NGVD)-

Well ID	Type	Ground Elevation	Elevation Top of Casing	Length of Screen	Elevation Top of Screen	Depth to	Water	Well		Installation		Water Table Elv. > Top of Screen Elv.
						Water	Elevation	Type	Casing	Date	By	
						(10/24/97)						
P Series:												
P-1	shallow	U	30.09	U	U	7.62	22.47	flush	1.5" pvc	U	U	U
P-2	shallow	U	30.19	U	U	WA	WA	flush	1.5" pvc	U	U	U, WA
PI Series:												
PI-1	deep	U	26.90	U	U			flush	8" s.steel	10/91	Heritage	^
CW Series:												
CW-1	shallow	30.27	29.77	5	23.27	7.72	22.05	flush	s.steel	9/90	Heritage	No
CW-2	shallow	30.11	29.51	5	23.11			flush	s.steel	9/90	Heritage	NI
CW-3	shallow	U	29.72	5	U			flush	s.steel	9/90	Heritage	NI
CW-4	shallow	29.10	28.83	5	22.60	6.69	22.14	flush	s.steel	7/90	Heritage	No
CW-5	shallow	28.89	28.67	5	22.39			flush	s.steel	7/90	Heritage	NI
CW-6	shallow	29.25	28.93	5	25.25			flush	s.steel	9/90	Heritage	NI
CW-7	shallow	26.70	26.13	5	17.70	8.31	17.82	flush	s.steel	8/90	Heritage	Yes
CW-8	shallow	26.70	26.77	5	17.70	8.70	18.07	flush	s.steel	8/90	Heritage	Yes
CW-9	shallow	26.60	26.37	5	17.60			flush	s.steel	8/90	Heritage	NI
CW-10	shallow	26.50	25.91	5	17.50	7.75	18.16	flush	s.steel	8/90	Heritage	Yes

**TABLE II**  
**WELL CONSTRUCTION DATA**  
**HEXCEL FACILITY**  
**LODI, NEW JERSEY**

-All measurements in feet -  
 -All elevations in feet (NGVD)-

Well ID	Type	Ground Elevation	Elevation Top of Casing	Length of Screen	Elevation Top of Screen	Depth to	Water	Well		Installation		Water Table Elv. > Top of Screen Elv.
						Water	Elevation	Construction		Date	By	
						(10/24/97)		Type	Casing			
CW Series (continued):												
CW-11	shallow	26.60	25.74	5	17.60			vaultbox	s.steel	8/90	Heritage	NI
CW-12	shallow	26.51	25.71	5	17.51	7.61	18.10	flush	s.steel	8/90	Heritage	Yes
CW-13	shallow	26.60	26.05	5	17.60			flush	s.steel	8/90	Heritage	NI
CW-14	shallow	26.70	26.37	5	17.70	8.30	18.07	flush	s.steel	8/90	Heritage	Yes
CW-15	shallow	26.90	26.31	5	17.90			flush	s.steel	8/90	Heritage	NI
CW-16	shallow	27.00	26.45	5	18.00	8.40	18.05	flush	s.steel	8/90	Heritage	Yes
CW-17	shallow	27.10	26.25	5	18.10	7.54	18.71	flush	s.steel	8/90	Heritage	Yes
CW-18	shallow	27.20	26.61	5	18.20			flush	s.steel	8/90	Heritage	NI
CW-19	shallow	27.20	26.50	5	18.20			flush	s.steel	8/90	Heritage	NI
CW-20	shallow	27.30	26.74	5	18.30			flush	s.steel	8/90	Heritage	NI
CW-21	shallow	27.40	26.77	5	18.40			flush	s.steel	8/90	Heritage	NI
CW-22	shallow	27.30	26.35	5	18.30			flush	s.steel	8/90	Heritage	NI
MW Series:												
MW-1	(a)	29.03	32.42	5	13.88	10.65	21.77	stickup	pvc	7/88	Environ	(a)
MW-2	shallow	27.90	31.00	5	26.13	8.91	22.09	stickup	pvc	8/88	Environ	No
MW-3	deep	27.84	31.13	5	5.30	11.18	19.95	stickup	pvc	8/88	Environ	^
MW-4	shallow	29.02	32.33	5	27.49	8.36	23.97	stickup	pvc	8/88	Environ	No
MW-5	deep	29.03	32.54	5	9.12	12.02	20.52	stickup	pvc	8/88	Environ	^

**TABLE II**  
**WELL CONSTRUCTION DATA**  
**HEXCEL FACILITY**  
**LODI, NEW JERSEY**

-All measurements in feet -  
 -All elevations in feet (NGVD)-

Well ID	Type	Ground Elevation	Elevation Top of Casing	Length of Screen	Elevation Top of Screen	Depth to Water	Water Elevation	Well Construction		Installation		Water Table Elv. > Top of Screen Elv.
						(10/24/97)		Type	Casing	Date	By	
MW Series (continued):												
MW-6	shallow	27.14	30.74	10	22.12	10.69	20.05	stickup	pvc	8/88	Environ	No
MW-7	deep	27.18	30.68	5	2.55	10.58	20.10	stickup	pvc	7/88	Environ	^
MW-8	shallow	26.92	30.26	10	22.98	12.41	17.85	stickup	pvc	8/88	Environ	No
MW-9	deep	26.89	29.83	5	5.09	9.76	20.07	stickup	pvc	7/88	Environ	^
MW-10	shallow	27.33	30.83	11	24.81	12.85	17.98	stickup	pvc	8/88	Environ	No
MW-11	deep	27.28	30.78	10	6.86	10.96	19.82	stickup	pvc	7/88	Environ	^
MW-12	shallow	27.62	31.01	10	24.05	11.28	19.73	stickup	pvc	8/88	Environ	No
MW-13	deep	27.63	31.16	5	2.89	10.62	20.54	stickup	pvc	7/88	Environ	^
MW-14	shallow	27.12	30.70	9	24.18	11.94	18.76	stickup	pvc	8/88	Environ	No
MW-15	deep	27.17	30.77	5	10.13	9.78	20.99	stickup	pvc	7/88	Environ	^
MW-16	shallow	26.71	29.69	5	22.14	8.72	20.97	stickup	pvc	8/88	Environ	No
MW-17	shallow	29.10	31.44	8	25.10	9.91	21.53	stickup	pvc	1/89	Environ	No
MW-18	shallow	29.04	32.23	5	25.97	9.75	22.48	stickup	pvc	8/88	Environ	No
MW-19	deep	27.30	29.08	5	7.30	7.91	21.17	stickup	pvc	1/89	Environ	^
MW-20	shallow	28.50	27.95	5	13.50	5.56	22.39	flush	pvc	11/90	Heritage	Yes
MW-21	shallow	28.80	30.67	10	25.80	9.22	21.45	stickup	pvc	9/90	Heritage	No
MW-22	shallow	28.73	28.45	5	25.73	6.41	22.04	flush	pvc	12/90	Heritage	No
MW-23	shallow	27.83	27.51	5	22.83	5.38	22.13	flush	pvc	11/90	Heritage	No
MW-24	shallow	26.93	26.51	5	21.93	4.90	21.61	flush	pvc	11/90	Heritage	No
MW-25	shallow	26.47	26.03	10	23.47	7.79	18.24	flush	pvc	9/90	Heritage	No

**TABLE II**  
**WELL CONSTRUCTION DATA**  
**HEXCEL FACILITY**  
**LODI, NEW JERSEY**

-All measurements in feet -  
 -All elevations in feet (NGVD)-

Well ID	Type	Ground Elevation	Elevation Top of Casing	Length of Screen	Elevation Top of Screen	Depth to Water	Water Elevation	Well Construction		Installation		Water Table Elv. > Top of Screen Elv.
						(10/24/97)		Type	Casing	Date	By	
MW Series (continued):												
MW-26	(b)	29.26	28.85	2	12.26	8.18	20.67	flush	2" pvc	12/90	Heritage	(b)
MW-27	shallow	29.10	31.43	5	24.10	7.65	23.78	stickup	pvc	9/90	Heritage	No
MW-28	shallow	27.50	29.68	10	24.50	11.07	18.61	stickup	pvc	9/90	Heritage	No
MW-29	shallow	27.50	27.32	5	22.50	5.17	22.15	flush	pvc	2/91	Heritage	No
MW-30	shallow	28.25	28.08	5	22.25	5.89	22.19	flush	pvc	2/91	Heritage	No
MW-31	shallow	28.33	27.95	5	22.33	5.69	22.26	flush	pvc	2/91	Heritage	No
MW-32	shallow	U	32.51	6	U	WA	WA	stickup	pvc	4/92	Heritage	WA
MW-33	shallow	U	31.72	10	U	10.31	21.41	stickup	pvc	4/92	Heritage	U
PB Series:												
PB-1	shallow	17.46	21.78	1	16.46	N/A	N/A	stickup	2" g.steel	6/95	GEO	N/A
PB-2	shallow	17.50	21.25	1	16.70	1.34	19.91	stickup	2" g.steel	6/95	GEO	Yes
PB-4	shallow	17.52	21.52	1	16.72	1.86	19.66	stickup	2" g.steel	6/95	GEO	Yes

NOTES: Refer to "Table 2: Summary of Well Construction Data " provided in Appendix B of Progress Report dated July 31, 1995 for the list of sources used for compiling this table.

All measurements of depths are from the top of casing unless otherwise noted.

N/A: Well was inaccessible on the day of quarterly monitoring.

NI: Well not included in the quarterly monitoring.

U: Unknown.

\*: All wells 4" diameter unless otherwise noted.

^: Well is screened in the confined aquifer, therefore, the question is not applicable.

(a): Ground water elevation data from MW-1 have been excluded from both shallow and deep aquifer contours; refer to Section 1a of the April 1996 Report for details.

(b): Ground water elevation data from MW-26 have been excluded from both shallow and deep aquifer contours; refer to Section 1a of the April 1996 Report for details.

WA: P-2 and MW-32 were sealed on March 29, 1996; refer to April 1996 Progress Report text for details.

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January 1998

## Contour Map Reporting Form

Site Name: Hexcel Facility, Lodi, NJ  
Project No.: 94039

Figure No.: 1  
Water levels taken on 10/24/97  
Page 1 of 2

1. Did any surveyed well casing elevations change from the previous sampling event? ☐ Yes  
If yes, attach new "Well Certification -Form B" and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.) ☒ No

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? If yes, identify these wells. ☒ Yes  
☐ No

*Monitor wells for which the water table elevations are higher than the top of the well screen are identified in Table II: Well Construction Data provided in Appendix A.*

3. Are there any monitor wells present at the site but omitted from the contour map? ☒ Yes  
Unless the omission of the well(s) has been previously approved by the Department, justify the omissions. ☐ No

*Quarterly ground water elevation monitoring plan approved by NJDEP in its June 12, 1995 letter. For information on additional omissions, please refer to Figure 1 and Table 1.*

4. Are there any monitor wells containing separate phase product during this measuring event? ☒ Yes  
☐ No

*Note: Although the product-interface probe did not register presence of product, visual observation of the probe indicated presence of product (LNAPL or DNAPL).*

Were any of the monitor wells with separate phase product included in the ground water contour map? ☒ Yes  
☐ No

If yes, show the formula used to correct the water table elevation.

*See above note.*

Site Name:Hexcel Facility, Lodi, NJ  
Project No.:94039

Figure No.: 1  
Water levels taken on 10/24/97  
Page 2 of 2

5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? ☐ Yes  
☒ No  
If yes, discuss the reasons for the change.

6. Has ground water mounding and/or depressions been identified in the ground water contour map? ☒ Yes  
☐ No  
Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

*It is not known why mounding occurs in the vicinity of building 2.*

7. Are all the wells used in the contour map screened in the same water-bearing zone? ☒ Yes  
☐ No  
If no, justify inclusion of those wells.

8. Were the ground water contours  
☒ computer generated, ☐ computer aided, or ☐ hand-drawn?  
If computer aided or generated, identify the interpolation method(s) used.

*Kriging Routine*



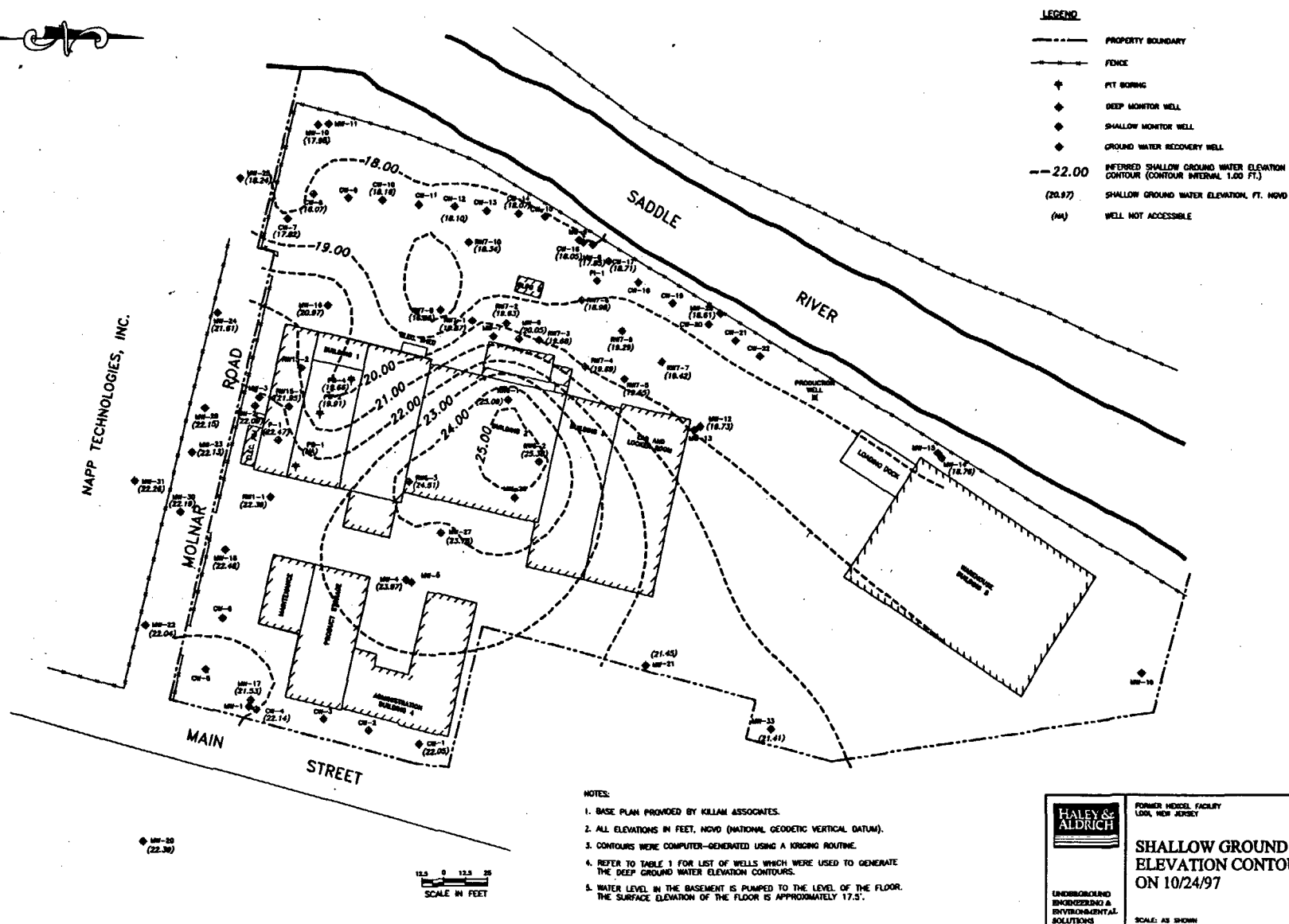


FIGURE 1

## Contour Map Reporting Form

Site Name: Hexcel Facility, Lodi, NJ  
Project No.: 94039

Figure No.: 2  
Water levels taken on 10/24/97  
Page 1 of 2

1. Did any surveyed well casing elevations change from the previous sampling event? ☐ Yes  
If yes, attach new "Well Certification -Form B" and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.) ☒ No

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? If yes, identify these wells. ☐ Yes  
☒ No

*Not applicable because confined aquifer.*

3. Are there any monitor wells present at the site but omitted from the contour map? ☐ Yes  
Unless the omission of the well(s) has been previously approved by the Department, justify the omissions. ☒ No

4. Are there any monitor wells containing separate phase product during this measuring event? ☐ Yes  
☒ No

Were any of the monitor wells with separate phase product included in the ground water contour map? ☐ Yes  
☒ No

If yes, show the formula used to correct the water table elevation.

5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? ☐ Yes  
☒ No  
If yes, discuss the reasons for the change.

6. Has ground water mounding and/or depressions been identified in the ground water contour map? ☐ Yes  
☒ No  
Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

**Site Name:**Hexcel Facility, Lodi, NJ  
**Project No.:**94039

**Figure No.:** 2  
**Water levels taken on** 10/24/97  
**Page 2 of 2**

7. Are all the wells used in the contour map screened in the same water-bearing zone? ☒ Yes  
If no, justify inclusion of those wells. ☐ No

8. Were the ground water contours  
☒ computer generated, ☐ computer aided, or ☐ hand-drawn?  
If computer aided or generated, identify the interpolation method(s) used.

*Kriging Routine*

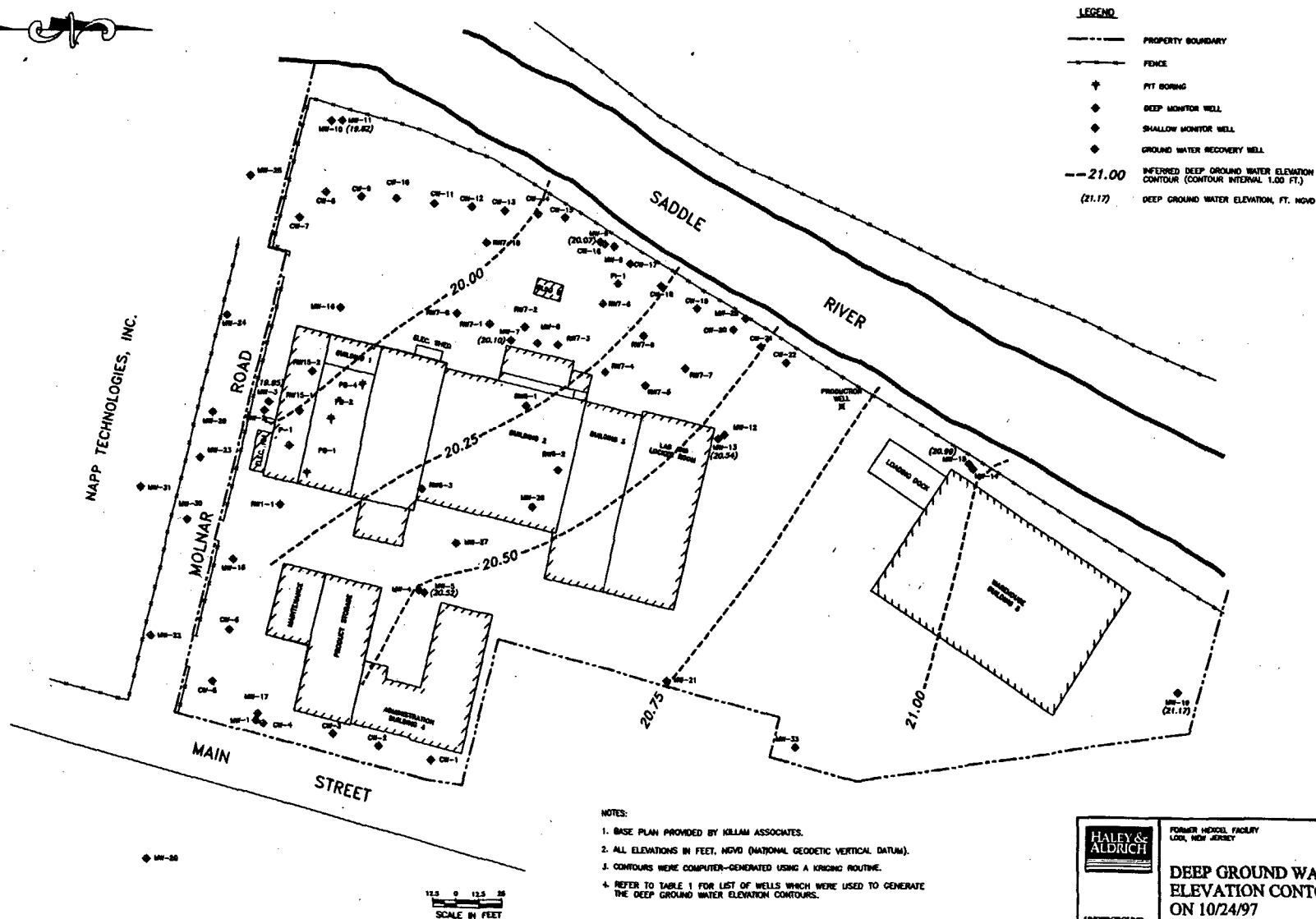


FIGURE 2

**Appendix B**

**Monthly Monitoring**

**Table III: Monthly Water Level/Product Thickness Measurements for November 1997**

**Table IV: Monthly Water Level/Product Thickness Measurements for December 1997**

**TABLE III**  
**MONTHLY WATER LEVEL/PRODUCT THICKNESS MEASUREMENTS FOR NOVEMBER 1997**  
**HEXCEL FACILITY**  
**LODI, NEW JERSEY**

-All measurements in feet -  
 -All elevations in feet (NGVD)-

MEASUREMENTS COLLECTED : 11/25/97

Well ID	Type	Depth to Water	Depth to Product		Product Thickness	Depth to Bottom	Elevation Top of Casing	Water Elevation	Comments
			DNAPL	LNAPL					
CW-7	shallow	7.75	--	--	--	14.00	26.13	18.38	Product on probe (LNAPL)**
CW-12	shallow	7.03	--	--	--	13.99	25.71	18.68	Product on probe (DNAPL)**
CW-16	shallow	7.66	--	--	--	13.93	26.45	18.79	Product on probe (DNAPL)**
MW-6	shallow	10.16	--	--	--	18.32	30.74	20.58	Product on probe (DNAPL and LNAPL)**; LNAPL recovered from absorbent pad.
MW-8	shallow	11.87	--	--	--	17.36	30.26	18.39	Product on probe (DNAPL)**
RW6-1	shallow	3.47	--	--	--	13.74	28.84	25.37	Product on probe (DNAPL)**
RW7-1	shallow	6.04	--	--	--	16.55	26.25	20.21	
RW7-4	shallow	6.96	--	--	--	19.04	27.11	20.15	
PB-1	shallow	NM	--	--	--	NM	21.78	NM	Sediment on probe
PB-2	shallow	0.94	--	--	--	5.82	21.25	20.31	Product on probe (DNAPL)**

**NOTES:**

All measurements of depths are from the top of casing unless otherwise noted.

Many of the wells have accumulated sediment which results in slight fluctuations in the measurements of depth to bottom.

--: Not detected by product interface meter.

\*: In wells with LNAPL, water levels are corrected using the equation: DTW (corrected) = DTW (measured) - (Product thickness \* specific gravity).

Specific gravity of 0.88 used for water level correction (petroleum lubricating oil).

\*\*: Though the product-interface meter did not register presence of product in the well, product was observed on the probe.

NA: Well not accessible for monitoring.

NM: Depth to bottom could not be measured due to sediment in the well.

I:\94039\MONTHLY\MONTH97.xls (Nov97)

January 1998

**TABLE IV**  
**MONTHLY WATER LEVEL/PRODUCT THICKNESS MEASUREMENTS FOR DECEMBER 1997**  
**HEXCEL FACILITY**  
**LODI, NEW JERSEY**

-All measurements in feet -

-All elevations in feet (NGVD)-

MEASUREMENTS COLLECTED : 12/22/97

Well ID	Type	Depth to Water	Depth to Product		Product Thickness	Depth to Bottom	Elevation Top of Casing	Water Elevation	Comments
			DNAPL	LNAPL					
CW-7	shallow	7.80	--	--	--	14.00	26.13	18.33	
CW-12	shallow	7.28	--	--	--	13.98	25.71	18.43	Product on probe (DNAPL)**
CW-16	shallow	7.74	--	--	--	13.93	26.45	18.71	Product on probe (DNAPL)**
MW-6	shallow	10.44	--	--	--	18.35	30.74	20.30	Product on probe (DNAPL)**
MW-8	shallow	12.07	--	--	--	17.34	30.26	18.19	Product on probe (DNAPL)**
RW6-1	shallow	3.69	--	--	--	13.74	28.84	25.15	Product on probe (DNAPL)**
RW7-1	shallow	6.25	--	--	--	16.56	26.25	20.00	
RW7-4	shallow	7.14	--	--	--	19.07	27.11	19.97	Product on probe (DNAPL)**
PB-1	shallow	NM	--	--	--	NM	21.78	NM	Sediment on probe
PB-2	shallow	0.94	--	--	--	5.82	21.25	20.31	Product on probe (DNAPL)**

**NOTES:**

All measurements of depths are from the top of casing unless otherwise noted.

Many of the wells have accumulated sediment which results in slight fluctuations in the measurements of depth to bottom.

--: Not detected by product interface meter.

\*: In wells with LNAPL, water levels are corrected using the equation: DTW (corrected) = DTW (measured) - (Product thickness \* specific gravity).

Specific gravity of 0.88 used for water level correction (petroleum lubricating oil).

\*\* : Though the product-interface meter did not register presence of product in the well, product was observed on the probe.

NA: Well not accessible for monitoring.

NM: Depth to bottom could not be measured due to sediment in the well.

I:\94039\MONTHLY\MONTH97.xls (Dec97)

January 1998

## **Appendix C**

### **Product Recovery**

**Table V: Product Collection (DNAPL) in Fourth Quarter of 1997**

**Table VI: Product Collection (LNAPL) in Fourth Quarter of 1997**



**TABLE V**  
**PRODUCT COLLECTION (DNAPL) IN FOURTH QUARTER OF 1997**  
**HEXCEL FACILITY**  
**LODI, NEW JERSEY**

*All Quantities are Expressed in Gallons Rounded to the Nearest 0.1*

DATE	MW-6 (DNAPL)	MW-8 (DNAPL)	MW-26 (DNAPL)	RW6-1 (DNAPL)	RW7-1 (DNAPL)	RW7-4 (DNAPL)	RW7-5 (DNAPL)	CW-12 (DNAPL)	CW-16 (DNAPL)	PB-2 (DNAPL)	CW-15^ (DNAPL)	TOTAL VOLUME RECOVERED
10/24/97 (Quarterly)	--	--	--	--	--	--	--	--	--	--	*	↓
11/25/97 (Monthly)	--	--	*	--	--	--	*	--	--	--	*	
12/5/97	0.1	*	*	*	*	*	*	*	*	*	*	
12/9/97	--	*	*	*	*	*	*	*	*	*	*	
12/17/97	--	*	*	*	*	*	*	*	*	*	*	
12/22/97 (Monthly)	--	--	*	--	--	--	*	--	--	--	*	
TOTAL VOLUME RECOVERED, 4th QUARTER, 1997	0.1	--	--	--	--	--	--	--	--	--	--	0.1
TOTAL VOLUME RECOVERED, 3rd QUARTER 1997	0.2	--	--	--	--	--	--	--	--	0.5	--	0.7
TOTAL VOLUME RECOVERED, 10/94 - 6/97	18.4	1.0	0.4	0.1	0.3	--	--	0.7	0.7	4.1	0.8	26.5
TOTAL VOLUME RECOVERED (TOTAL SINCE 10/94)	18.7	1.0	0.4	0.1	0.3	--	--	0.7	0.7	4.6	0.8	27.3

**Notes:** For product recovery purposes, quantities greater than 0.1 gallons (approx. 1 cup) are considered to be "measurable". It is not practicable to separate product from mixture of water and product when quantity is less than 1 cup.

\*: Well not included in the weekly product recovery program.

--: i) Well was monitored and did not indicate recoverable product or ii) no measurable amount of product was recovered either by bailing or pumping.

^: CW-15 was removed from the product recovery program on 11/22/95 because ground water recovery equipment was re-installed in the well.

NA: Well not available for monitoring due to drums.

I:\94039\PRODCOLL\ProdCol2.xls (FOURTH QD'97)

January 1998

**TABLE VI**  
**PRODUCT COLLECTION (LNAPL) IN FOURTH QUARTER OF 1997**  
**HEXCEL FACILITY**  
**LODI, NEW JERSEY**

*All Quantities are Expressed in Gallons Rounded to the Nearest 0.1*

DATE	MW-6 (LNAPL)	MW-8 (LNAPL)	MW-23 (LNAPL)	RW1-1 (LNAPL)	RW 6-1 (LNAPL)	RW7-4 (LNAPL)	RW7-5 (LNAPL)	CW-7 (LNAPL)	CW-12 (LNAPL)	CW-15^ (LNAPL)	CW-16 (LNAPL)	MW-17 (LNAPL)	RW 15-1 (LNAPL)	TOTAL VOLUME RECOVERED
10/24/97 (Quarterly)	--	--	--	--	--	--	--	--	--	*	--	--	--	↓
11/25/97 (Monthly)	0.2	--	*	*	--	--	*	--	--	*	--	*	*	
12/5/97	--	*	*	*	*	*	*	*	*	*	*	*	*	
12/9/97	--	*	*	*	*	*	*	*	*	*	*	*	*	
12/17/97	--	*	*	*	*	*	*	*	*	*	*	*	*	
12/22/97 (Monthly)	--	--	*	*	--	--	*	--	--	*	--	*	*	
TOTAL VOLUME RECOVERED, 4th QUARTER, 1997	0.2	--	--	--	--	--	--	--	--	--	--	--	--	0.2
TOTAL VOLUME RECOVERED, 3rd QUARTER 1997	--	--	--	--	--	--	--	1.3	--	--	--	--	--	1.3
TOTAL VOLUME RECOVERED, 10/94 - 6/97	6.7	--	--	--	--	--	--	1.3	--	--	--	--	--	8.0
TOTAL VOLUME RECOVERED (TOTAL SINCE 10/94)	6.9	--	--	--	--	--	--	2.6	--	--	--	--	--	9.5

**Notes:** For product recovery purposes, quantities greater than 0.1 gallons (approx. 1 cup) are considered to be "measurable". It is not practicable to separate product from mixture of water and product when quantity is less than 1 cup.

\* Well not included in the weekly product recovery.

-- i) Monitoring did not indicate recoverable product or ii) no measurable amount of LNAPL was recovered in the absorbent pad.

^ CW-15 was removed from the product recovery program on 11/22/95 because ground water recovery equipment was re-installed in the well.

NA Well not available for monitoring due to drums.

I:\94039\PRODCOLL\ProdCol2.xls (FOURTH QL'97)

January 1998

## **Appendix D**

### **Installation of Replacement Monitoring Well**

#### **Figure 3: Borings and Replacement Well Locations**

#### **Well Construction Details**

#### **Well Permit**

#### **Monitoring Well Record**

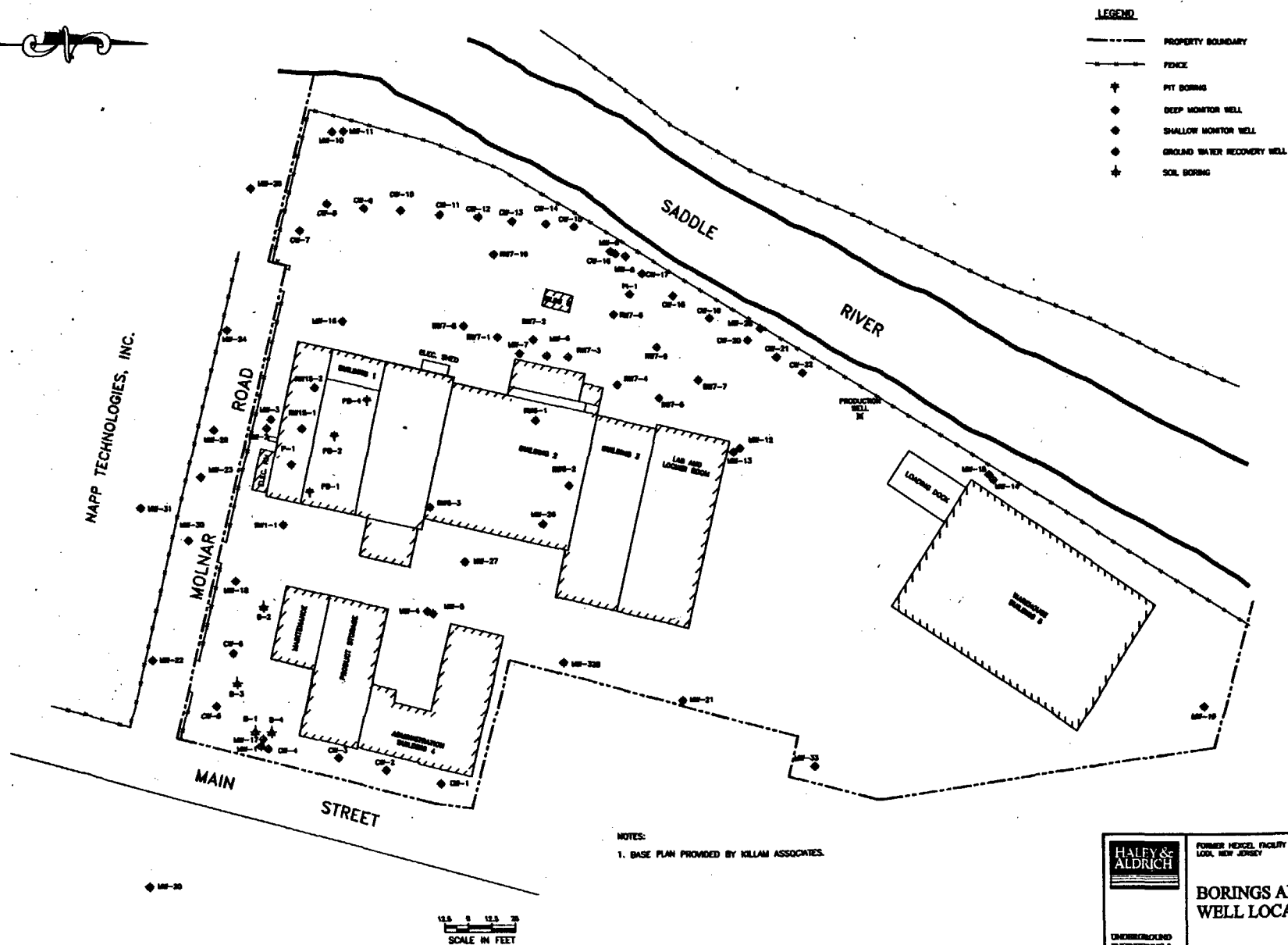


FIGURE 3

## Boring Log & Monitor Well Construction

Client: Hexcel Corporation  
Project: ISRA Case # 86009  
Location: Lodi, New Jersey  
Drilling Contractor: Summit Drilling  
Haley & Aldrich Rep.: RMS  
Surface Elevation: Not available at this time  
Well Permit No.: 2649151

Boring No: MW-32B  
Page 1 of 1  
File No.: 94039.00 T4

Date Started: 11/18/97  
Date Completed: 11/18/97

Sample		Blows /12"	Depth (Feet)	Well Info	Soil Type	Soil Description
No.	Recovery					
1	13"	9	0			First 1' augered through. Top 2": Black Asphalt. Next 10": Gray coarse to medium Gravel; base course.
2	12"	36			FILL	Brown, loose, fine SAND, little Silt.
						Top 6": Same as above.
						Bottom 6": Red-Brown Siltstone; possible cobble in fill.
3	14"	47	5			Top 3": Brown, dense, fine SAND, little Silt; moist.
						Bottom 11": Brown-Black, dense, coarse to fine SAND, some Silt, little fine Gravel; moist.
					SP	
4	18"	30				Top 10": Brown-Black, dense, coarse to fine SAND, some Silt, trace medium to fine Gravel; wet.
					ML	Bottom 8": Brown SILT; wet.
						Boring terminated at 9' - Silt layer.
			10			
			15			




**Monitor Well Construction Details: See Attached Symbol Legend**

<b>Well Depth:</b> 9.0'	<b>Borehole Diameter:</b> 8"
<b>Well Diameter:</b> 4" dia.	<b>Solid Riser Type:</b> Sch 40 PVC
<b>Solid Riser Length:</b> 5.0'	<b>Screen Type:</b> 010 Slot Sch 40 PVC
<b>Screen Length:</b> 6.0'	<b>Gravel Pack Type:</b> Morie #01
<b>Gravel Pack Depth:</b> 2 - 9'	<b>Grout Type:</b> Bentonite Powder
<b>Grout Depth:</b> 1-2'	<b>Grout Type:</b> Cement
<b>Grout Depth:</b> 0-1'	

Stick up well with 2' of riser above ground with protective casing

**Sampler Type: ASTM Split Spoon**

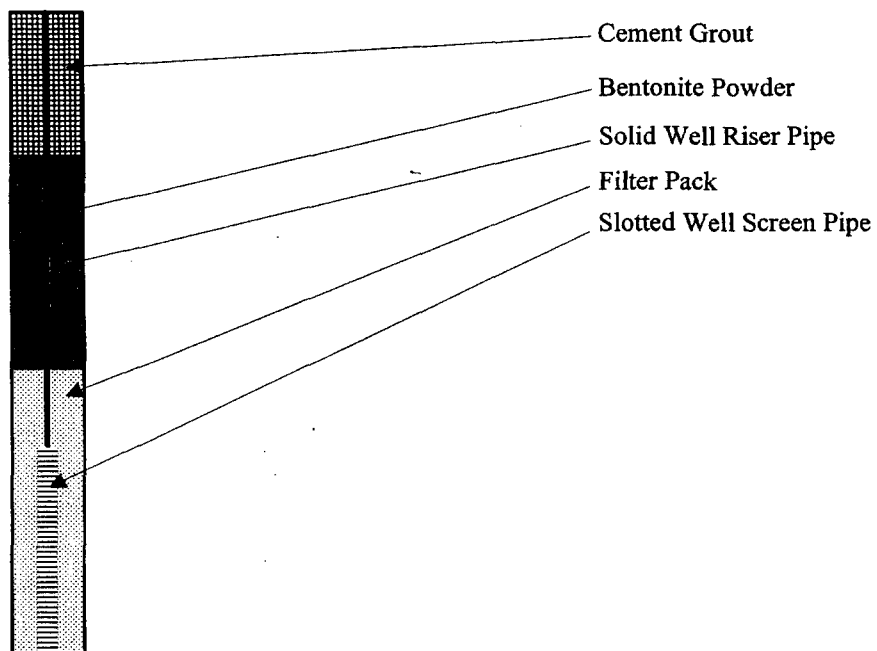
**Boring Method: Hollow Stem Auger, 2-1/2" ID For Boring  
Air Rotary, 8" OD For Well Installation**

 Sample Recovered  
 No Recovery  
 Water level

**882370037**

## Monitor Well Construction Symbol Legend

Monitor Well



STATE OF NEW JERSEY  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
TRENTON, NJ

Mail to

NJDEP  
Bureau Water Allocation  
CN 426  
Trenton, NJ 08625-0426

## MONITORING WELL PERMIT

VALID ONLY AFTER APPROVAL BY THE D.E.P.

Permit No.

COORD #:

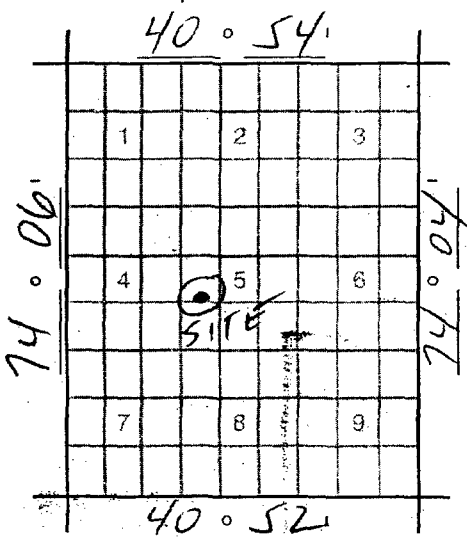
Owner HEXCEL CORPORATION  
Address 5794 WEST LAS POSITAS BLVD.  
PLEASANTON, CA. 94588  
Name of Facility FINE ORGANICS  
Address 205 MAIN ST.  
LODI NJ 07644

Driller Summit Drilling Co., Inc.  
Address Central Jersey Industrial Park  
Chimney Rock Road, Building 9W  
Bound Brook, NJ 08805

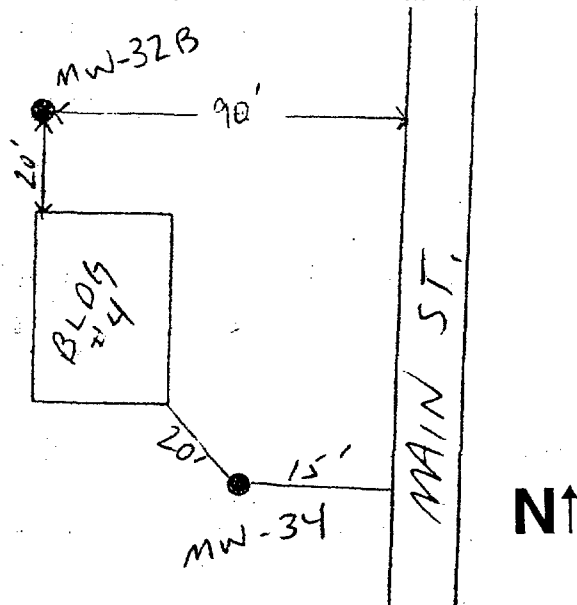
Diameter of Well(s) <u>4</u> Inches	Proposed Depth of Well(s) <u>15-35</u> Feet
# of Wells Applied for (max. 10) <u>2</u>	Will pumping equipment be installed? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Type of Well (see reverse) <u>MONITORING</u>	If Yes, give pump capacity <u>NA</u> cumulative GPM

## LOCATION OF WELL(S)

Lot # 10A Block # 81A Municipality LODI County BERGEN

State Atlas Map No. 26

Draw sketch of well(s) nearest roads, buildings, etc. with marked distances in feet. Each well MUST be labeled with a name and/or number on the sketch.



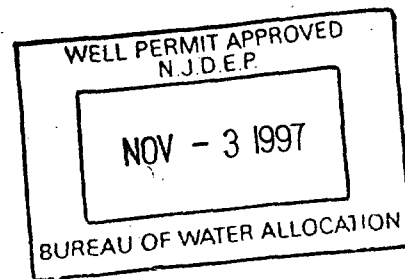
FOR MONITORING WELLS, RECOVERY WELLS, OR PIEZOMETERS, THE FOLLOWING MUST BE COMPLETED BY THE APPLICANT. PLEASE INDICATE WHY THE WELLS ARE BEING INSTALLED:

- ☐ Spill Site  
☒ ISRA Site  
☐ CERCLA (Superfund) Site  
☐ RCRA Site  
☐ Underground Storage Tank Site  
☐ Operational Ground Water Permit Site  
☐ Pretreatment and Residuals Site  
☐ Water and Hazardous Waste Enforcement Case  
☐ Water Supply Aquifer Test Observation Well  
☐ Other (explain) \_\_\_\_\_

CASE I.D. Number

86009

This Space for Approval Stamp



FOR D.E.P. USE

- ☐ Issuance of this permit is subject to the conditions attached. (see next page)  
☒ For monitoring purposes only.

- ☒ The well(s) may not be completed with more than 25 feet of total screen or uncased borehole.

SEE REVERSE SIDE FOR IMPORTANT PROVISIONS AND REGULATIONS PERTAINING TO THIS PERMIT.

In compliance with N.J.S.A. 58:4A-14, application is made for a permit to drill a well as described above.

Date

10-30-97

Signature of Driller

John Voigt

Registration No.

51544

Signature of Owner

Robert ShankMSGEO ENG.

882370039

## MONITORING WELL RECORD

Well Permit No. 26 - 49151  
Atlas Sheet Coordinates 26 : 03 : 554OWNER IDENTIFICATION - Owner HEXCEL CORPORATIONAddress 5794 WEST LASPOSITAS BLVD.PLEASANTONCity PLEASANTON State CA Zip Code 

WELL LOCATION - If not the same as owner please give address

County BERGEN Municipality LODI BOROAddress 225 MAIN ST.Owner's Well No. MW32BLot No. 10A Block No. 81ADate well started 11/18/97TYPE OF WELL (as per Well Permit Categories) MONITORINGDate well completed 11/18/97Regulatory Program Requiring Well ISRA SITECase I.D. # 86070CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Geo EngineeringTele. # 

## WELL CONSTRUCTION

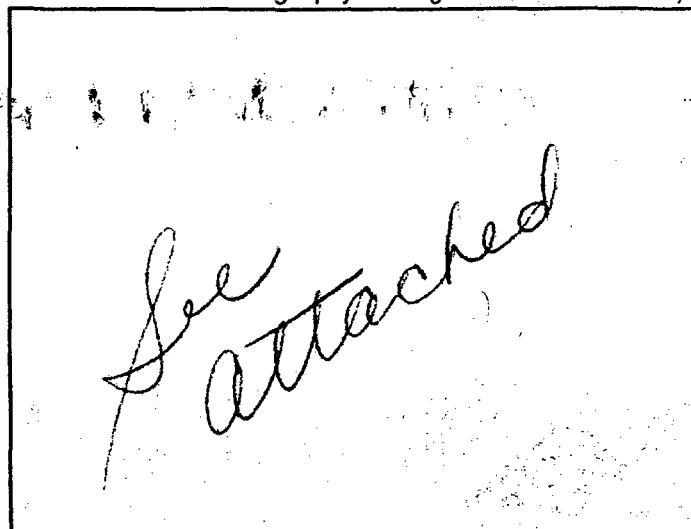
Total depth drilled 9 ft.Well finished to 9 ft.Borehole diameter:  
Top 8 in.Bottom 8 in.Well was finished: ☐ above grade☒ flush mountedIf finished above grade, casing  
height (stick up) above land  
surface  ft.

Was steel protective casing installed?

☐ Yes ☒ NoStatic water level after drilling 5 ft.Water level was measured using tapeWell was developed for 1/2 hours at 1/2 gpmMethod of development pumpWas permanent pumping equipment installed? ☐ Yes ☒ NoPump capacity  gpmPump type: Drilling Method Air RotaryDrilling Fluid  Type of Rig B-80Name of Driller Al BambaceHealth and Safety Plan submitted? ☒ Yes ☐ NoLevel of Protection used on site (circle one) None D C B AN.J. Registration No. J13Name of Drilling Company SUMMIT WELL DRILLING CO INC

	Depth to Top (ft.) (From land surface)	Depth to Bottom (ft.)	Diameter (inches)	Type and Material
Inner Casing	0	3	4	Sch 40 PVC
Outer Casing (Not Protective Casing)				
Screen (Note slot size)	3	9	4	Sch 40 PVC <sup>010</sup>
Tail Piece				
Gravel Pack	2	9		Mow #1
Annular Seal/Grout	0	2		Portland
Method of Grouting	gravity			

## GEOLOGIC LOG

(Copies of other geologic logs and/or  
geophysical logs should be attached.)

I certify that I have drilled the above-referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Driller's Signature

Al BambaceDate 12/5/97



**Appendix E**  
**Borings in the Vicinity of Monitoring Well MW-1**  
**Boring Logs**



## Boring Log

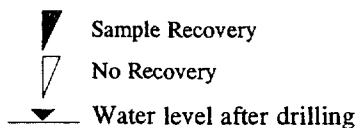
Client: Hexcel Corporation  
Project: ISRA Case # 86009  
Location: Lodi, New Jersey  
Drilling Contractor: Summit Drilling  
Haley & Aldrich Rep.: RMS  
Surface Elev.: Not Available

Boring No.: B-1  
Page 1 of 1  
File No.: 94039.00 T4  
Date Started: 11/18/97  
Date Completed: 11/18/97

Sample		Blows /12"	Depth (Feet)	Soil Type	Soil Description
No.	Recovery				
1	8"	26	0		First 1' augered through. Top 2": Asphalt. Middle 3": Gravel (base course) Bottom 7": Brown medium to fine SAND, little Silt.  Brown, medium dense, fine SAND, some Clayey Silt.
2	15"	19		FILL	Brown, medium dense, fine SAND, and Silt.
3	17"	27	5		Top 10": Same as above. Bottom 7": Brown-black, medium dense, coarse to fine SAND, trace fine Gravel; moist.
4	20"	23			Top 8": Brown-black, medium dense, coarse to fine SAND, trace medium to fine Gravel; wet. Bottom 12": Gray, medium dense, fine SAND, and Silt; wet.
5	9"	14		SP	Gray, medium dense, coarse to fine SAND, some medium to fine Gravel; wet.
6	20"	14		ML	Top 7": Same as above. Next 9": Gray, medium dense, SILT, trace fine Sand; wet. Bottom 4": Gray, medium dense, coarse to fine SAND, trace Silt, little medium to fine Gravel; wet.
7	0	11		SP	No recovery. Boring terminated at 15' - Running sands encountered. Boring filled with bentonite pellets upon completion.
			15		

Sampler Type: ASTM Split Spoon

Boring Method: Hollow Stem Auger (2-1/2" ID)



882370042

# Boring Log




Client: Hexcel Corporation  
 Project: ISRA Case # 86009  
 Location: Lodi, New Jersey  
 Drilling Contractor: Summit Drilling  
 Haley & Aldrich Rep.: RMS  
 Surface Elev.: Not Available

Boring No.: B-2  
 Page 1 of 1  
 File No.: 94039.00 T4  
 Date Started: 11/18/97  
 Date Completed: 11/18/97

Sample		Blows /12"	Depth (Feet)	Soil Type	Soil Description
No.	Recovery				
			0		First 1' augered through. Top 6": Concrete. Bottom 6": Brown fine SAND, trace Silt.
1	12"	11		FILL	Brown, medium dense, fine SAND, little Silt.
2	10"	30			Top 6": Same as above. Bottom 4": Brown, medium dense, coarse to fine SAND, trace Silt.
3	13"	21	5	SP	Top 3": Same as above. Bottom 10": Gray, medium dense, coarse to fine SAND, little medium to fine Gravel.
4	23"	17			Top 6": Same as above.
				ML	Bottom 17": Gray, medium dense, SILT.
					Boring terminated at 9' - Silt layer.
					Boring filled with bentonite pellets upon completion.
			10		
			15		

Sampler Type: ASTM Split Spoon

Boring Method: Hollow Stem Auger (2-1/2" ID)

 Sample Recovery  
 No Recovery  
 Water level after drilling

882370043

# Boring Log




Client: Hexcel Corporation  
 Project: ISRA Case # 86009  
 Location: Lodi, New Jersey  
 Drilling Contractor: Summit Drilling  
 Haley & Aldrich Rep.: RMS  
 Surface Elev.: Not Available

Boring No.: B-3  
 Page 1 of 1  
 File No.: 94039.00 T4  
 Date Started: 11/19/97  
 Date Completed: 11/19/97

Sample		Blows /12"	Depth (Feet)	Soil Type	Soil Description
No.	Recovery				
			0		First 1' augered through. Top 1": Asphalt. Bottom 11": Brown fine SAND, some Clayey Silt.
1	18"	8			Brown, loose, medium to fine SAND, some Clayey Silt.
2	15"	12		FILL	Brown, medium dense, medium to fine SAND, little Silt.
3	14"	17	5		Brown, medium dense, medium to fine SAND, trace Silt.
4	10"	38		SP	Top 4": Brown, dense, medium to fine SAND, trace Silt. Bottom 6": Black, dense, coarse to medium SAND, trace Silt, little medium to fine Gravel; possible fill.
5	19"	42		ML	Top 4": Same as above. Bottom 15": Brown, dense, SILT; gray marbling in silt.
			10		Boring terminated at 11' - Silt layer.
					Boring filled with bentonite pellets upon completion.
			15		

Sampler Type: ASTM Split Spoon

Boring Method: Hollow Stem Auger (2-1/2" ID)

 Sample Recovery  
 No Recovery  
 Water level after drilling

882370044

# Boring Log




Client: Hexcel Corporation  
 Project: ISRA Case # 86009  
 Location: Lodi, New Jersey  
 Drilling Contractor: Summit Drilling  
 Haley & Aldrich Rep.: RMS  
 Surface Elev.: Not Available

Boring No.: B-4  
 Page 1 of 2  
 File No.: 94039.00 T4  
 Date Started: 11/19/97  
 Date Completed: 11/19/97

Sample		Blows /12"	Depth (Feet)	Soil Type	Soil Description
No.	Recovery				
			0		First 1' augered through. Top 2": Asphalt. Middle 3": Gravel (base course) Bottom 7": Brown medium to fine SAND, little Silt.
1	10"	10			Brown, loose, medium to fine SAND, some Clayey Silt.
2	16"	10		FILL	Brown, loose, medium to fine SAND, trace Silt.
3	14"	16	5		Top 8": Brown, medium dense, medium to fine SAND, trace Silt. Bottom 6": Brown, medium dense, coarse to medium SAND, trace Silt.
4	14"	21			Top 2": Gray, medium dense, fine SAND, little Silt. Bottom 12": Gray, medium dense, coarse to medium SAND, trace Silt, some medium to fine Gravel; wet.
5	17"	17			Top 2": Same as above. Bottom 15": Gray, medium dense, SILT, some fine Sand; wet.
6	11"	15	10	ML	Same as above.
7	18"	21		SP	A long bolt was used to connect the bit to the auger and caused the split spoon to become caught on the bolt. The entire length of the auger was removed from the hole to install a short bolt prior to collecting the 7th sample. Thus, the 7th sample may have been disturbed. Top 9": Brown, medium dense, medium to fine SAND, trace silt; wet. Bottom 9": Brown, medium dense, coarse to medium SAND, trace silt, some medium to fine Gravel; wet.
			15		

Sampler Type: ASTM Split Spoon

Boring Method: Hollow Stem Auger (2-1/2" ID)

 Sample Recovered  
 No Recovery  
 Water level after drilling

882370045



## Boring Log

Project: ISRA Case # 86009  
Location: Lodi, New Jersey

Boring No.: B-4  
Page 2 of 2  
File No.: 94039.00 T4

Sample		Blows	Depth	Soil	Soil Description
No.	Recovery	/12"	(Feet)	Type	
8	14"	15	15	SP	Spoon driven 18". Top 8": Brown, medium dense, medium to fine SAND; wet. Bottom 6": Brown, medium dense, coarse to medium SAND, trace fine Gravel; wet.
9	6"	7/6" 50/1"			Spoon driven 7". Gray, medium dense, coarse to medium SAND, trace Silt, some medium Gravel; wet. In tip of spoon: Red-brown sandstone pieces, possible bedrock. Boring terminated at 17.5'- Refusal.  Boring tremie grouted upon completion with a cement and bentonite slurry.
			20		
			25		
			30		
			35		

882370046

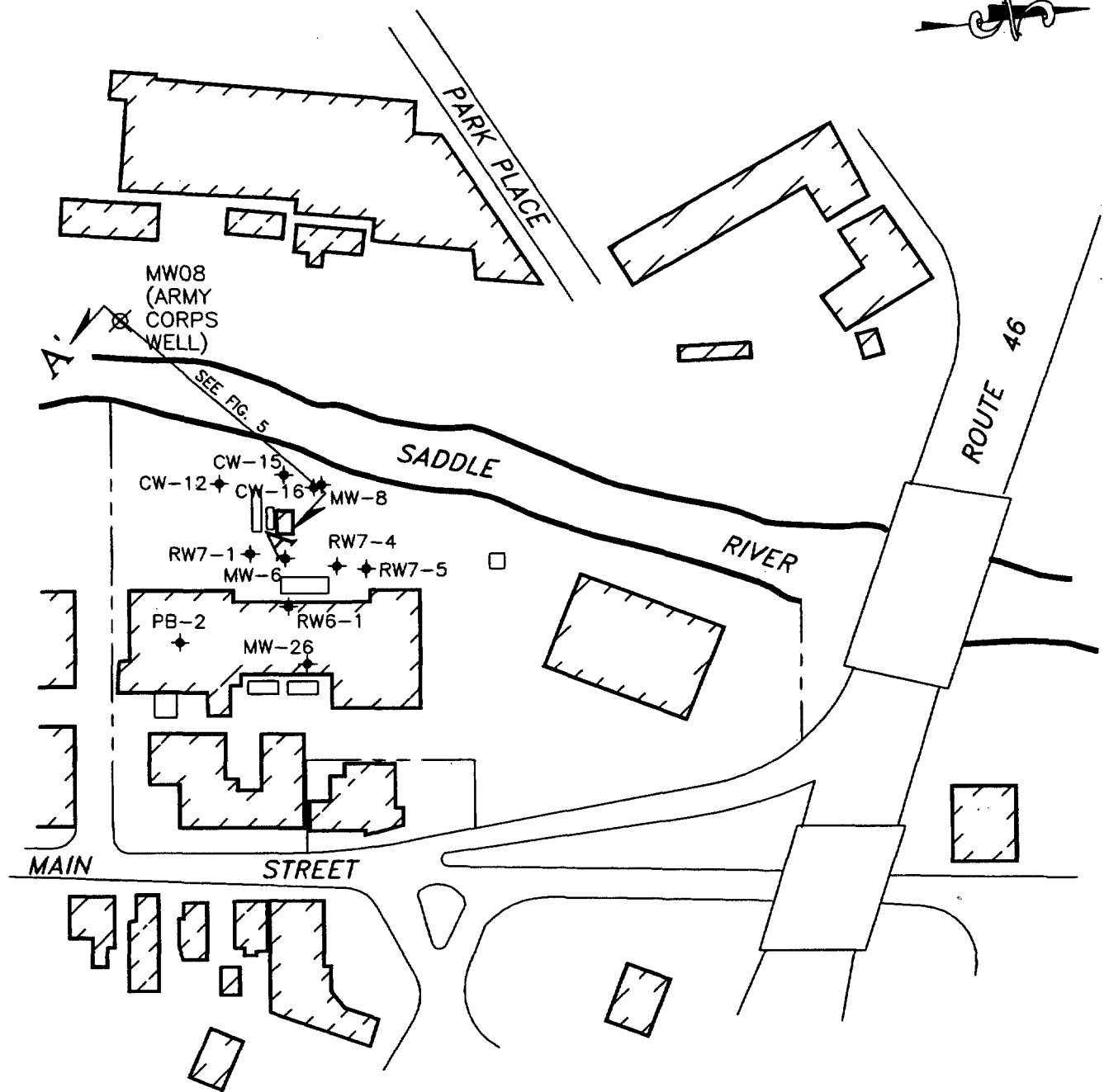
## **Appendix F**

### **Off-Site Investigation**

**Figure 4: Army Corps of Engineers Well Location Plan**

**Figure 5: Cross-section A-A'**

**Boring Log Provided by the Army Corps**



NOTES:

1. BASE PLAN TAKEN FROM PLATE NO. 2, "DELINEATION OF FLOODWAY AND FLOOD HAZARD AREA, SADDLE RIVER, STA 72+00 TO STA 44+00", BOROUGH OF LODI, CITY OF GARFIELD, BERGEN COUNTY, NEW JERSEY, DIVISION OF WATER RESOURCES, NJDEP, FEBRUARY 1986.
2. ON HEXCEL PROPERTY, ONLY WELLS WHICH HAVE HAD DNAPL DETECTED MORE THAN TWICE ARE SHOWN IN THIS FIGURE.

LEGEND

✦ MONITOR WELL

0 75 150  
SCALE IN FEET

HALEY & ALDRICH

UNDERGROUND  
ENGINEERING &  
ENVIRONMENTAL  
SOLUTIONS

FORMER HEXCEL FACILITY  
LODI, NEW JERSEY

ARMY CORPS OF ENGINEERS  
WELL LOCATION PLAN

SCALE: AS SHOWN

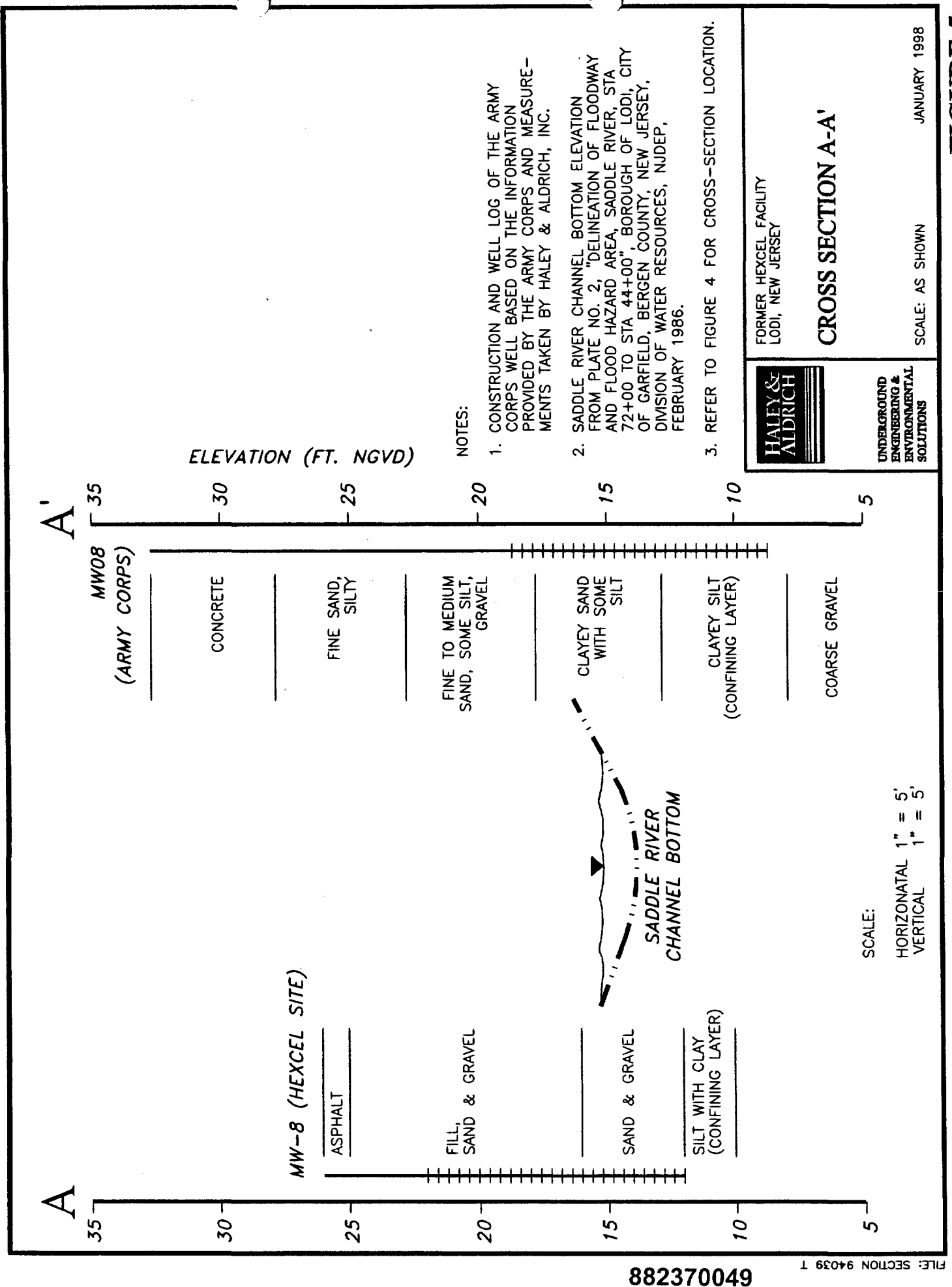
JANUARY 1998

FILE: ARMYCORP 94039 T4

882370048

FIGURE 4





**FIGURE 5**

Job Name		Saddle River		Boring No.		SR 40		Groundwater Level		
Job No.		03886-076-016		Surface Elevation		26'		Date		
Date Drilled		6 Oct. 1993		Boring Method		Hollow Stem Auger		During		
Drilling Co.		Testwell - Craig		Completion Depth		32'		drilling		
Drill Foreman		John Kozarski		Location		Pinto Property				
Logged By		B. Zern								
Depth (feet)	Sample No.	Sample Type	Sample Blow Counts (per 6 in.)	N Value	Visual	Description	Strat Elev	% Rec	% RQD	Laboratory Test Results
0	1	SS				No spoon taken due to very hard augering first 2.5' - material is concrete and brick rubble, coarse aggregate.				
5	2	SS	42-5-3-2	8		Lite gray, loose, silty fine sand with concrete pieces throughout, damp. Rock in tip of spoon. (ML)		6" 24"		
10	3	SS	3-3-3-4	6		Lite brown, loose fine-medium sand with some silt, rounded gravel pieces; transition at 16' to dark brown silty fine sand, glass pieces, some fine gravel, damp. (SM/ML)		15" 24"		SM or SC (top)
15	4	SS	2-2-1-1	3		Dark brown-black, loose clayey fine to medium sand with some silt, moist; transition at 16' to black, wet medium sand with trace of silt, slight oil odor. (SM). Groundwater at 16'.		24" 24"		SM (top)
20	5	SS	4-13-19 -20	32		Brown, dense clayey silt with few fine gravel pieces, fractured sandstone pieces (1" dia.) in tip. (ML)		8" 24"		ML
25										

Sample type: SS - Split Spoon  
ST - Shelby Tube  
RC - Rock Core

Laboratory Tests MC - Moisture Content  
AL - Atterberg Limits  
S - Sieve Analysis  
SH - Sieve/Hydrometer Analysis  
SG - Specific Gravity

C - Consolidation  
UU - Unconsolidated Undrained Triaxial  
CTU - Consolidated Undrained Triaxial  
UCS - Unconfined Compression Strength  
K - Hydraulic Conductivity

\*ASTM D-1586 Standard Penetration Test

Job Name		Saddle River		Boring No.		SR 40		Groundwater Level		
Job No.		03886-076-016		Surface Elevation		26'		Date		
Date Drilled		6 Oct. 1993		Boring Method		Hollow Stem Auger		During		
Drilling Co.		Testwell - Craig		Completion Depth		32'		drilling		
Drill Foreman		John Kozarski		Location		Pinto Property		16'		
Logged By		B. Zern								
Dept (feet)	Sample No.	Sample Type	Sample Blow Counts (per 6 in.)	N Value	Visual	Description	Strat Elev	% Rec	% RQD	Laboratory Test Results
25	6	SS	18-11-14 -16	25		Coarse gravel with gray sandstone pieces, may be wash.		4" 24"		
30	7	SS	15-10-10 -12	20		Coarse gravel with river gravel pieces (rounded) last 3". (GP)		10" 24"		
					END OF BORING					

Sample type: SS-Split Spoon  
ST-Shelby Tube  
RC-Rock Core

Laboratory Tests MC-Moisture Content  
AL-Atterberg Limits  
S-Sieve Analysis  
SH-Sieve/Hydrometer Analysis  
SG-Specific Gravity

C-Consolidation  
UU-Unconsolidated Undrained Triaxial  
CTU-Consolidated Undrained Triaxial  
UCS-Unconfined Compression Strength  
K-Hydraulic Conductivity

\*ASTM D-1586 Standard Penetration Test

## **Appendix G**

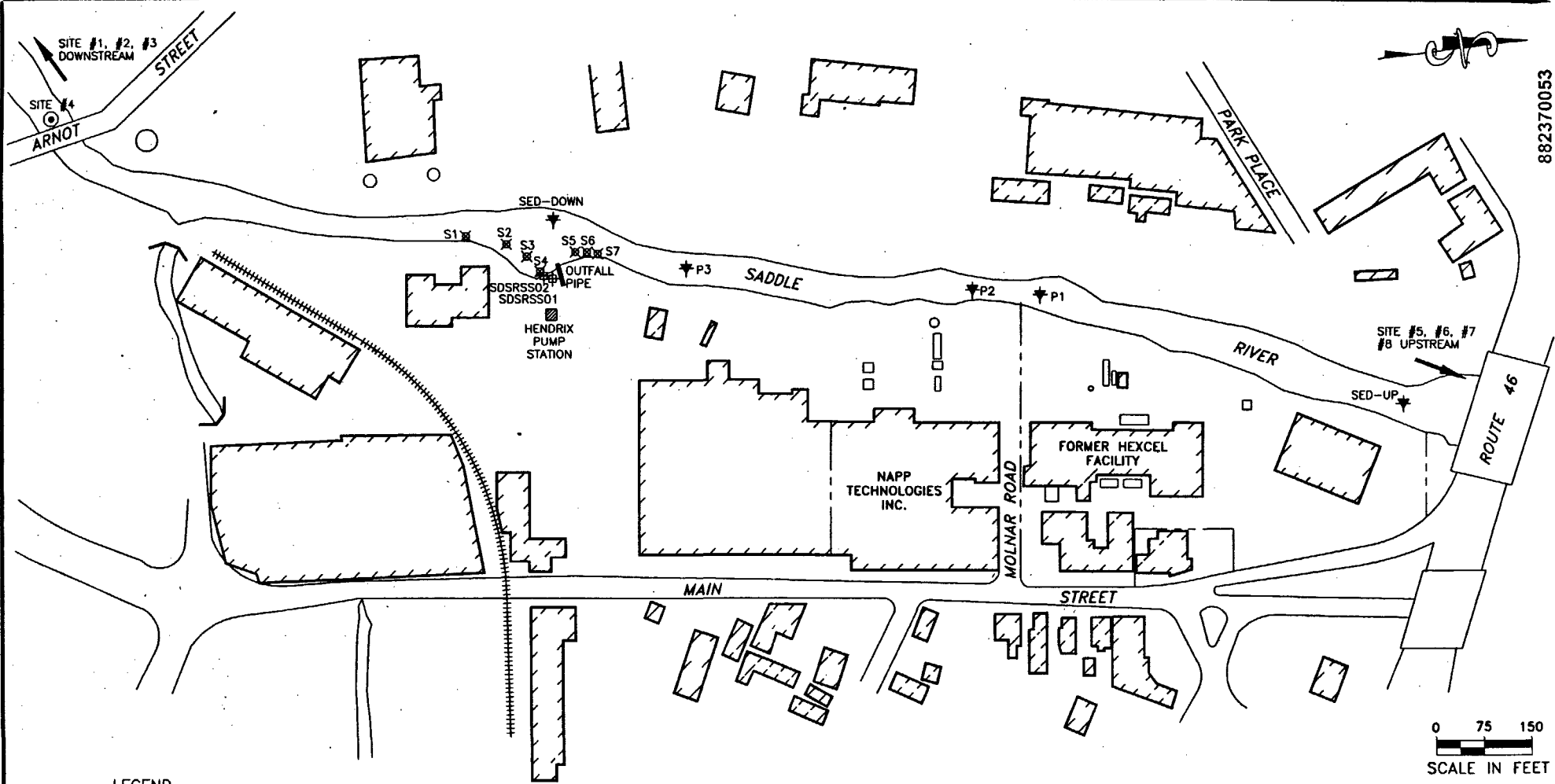
### **Sediment Sampling**

#### **Figure 6: Sediment Sampling Locations**

**Aquatic, Bottom Sediment and Water  
Quality Sampling Sites, Saddle River Basin  
Figure from Army Corps Report**

#### **Table VII: Saddle River Sediment Testing Results: PCBs and TOC**

#### **Table VIII: Sediment Quality Guidelines**



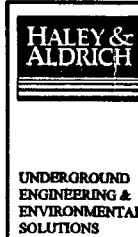
882370053

**LEGEND**

- ✕ SEDIMENT SAMPLE LOCATION COLLECTED BY HALEY & ALDRICH ON OCTOBER 10, 1997
- ✚ SEDIMENT SAMPLE LOCATION COLLECTED BY ENSR APRIL 1995 AND SEPTEMBER 1996
- ⊕ SEDIMENT SAMPLE LOCATION COLLECTED BY ENVIRON JUNE 1987
- ⊙ SEDIMENT SAMPLE LOCATION COLLECTED BY ARMY CORPS OF ENGINEERS DECEMBER 1983

**NOTES:**

1. BASE PLAN FROM "DELINEATION OF FLOODWAY AND FLOOD HAZARD AREA", BY THE STATE OF NEW JERSEY DEPT. OF ENVIRONMENTAL PROTECTION, DIVISION OF WATER RESOURCES, PLATE NO. 2, DATED FEBRUARY 1986.
2. FOR LOCATIONS OF SAMPLES SITE #1, 2, 3, 5, 6, 7, AND 8 REFER TO APPENDIX G, "AQUATIC, BOTTOM SEDIMENT AND WATER QUALITY SAMPLING SITE", BY THE US ARMY CORPS OF ENGINEERS, DATED DECEMBER 1983.



FORMER HEXCEL FACILITY  
LODI, NEW JERSEY

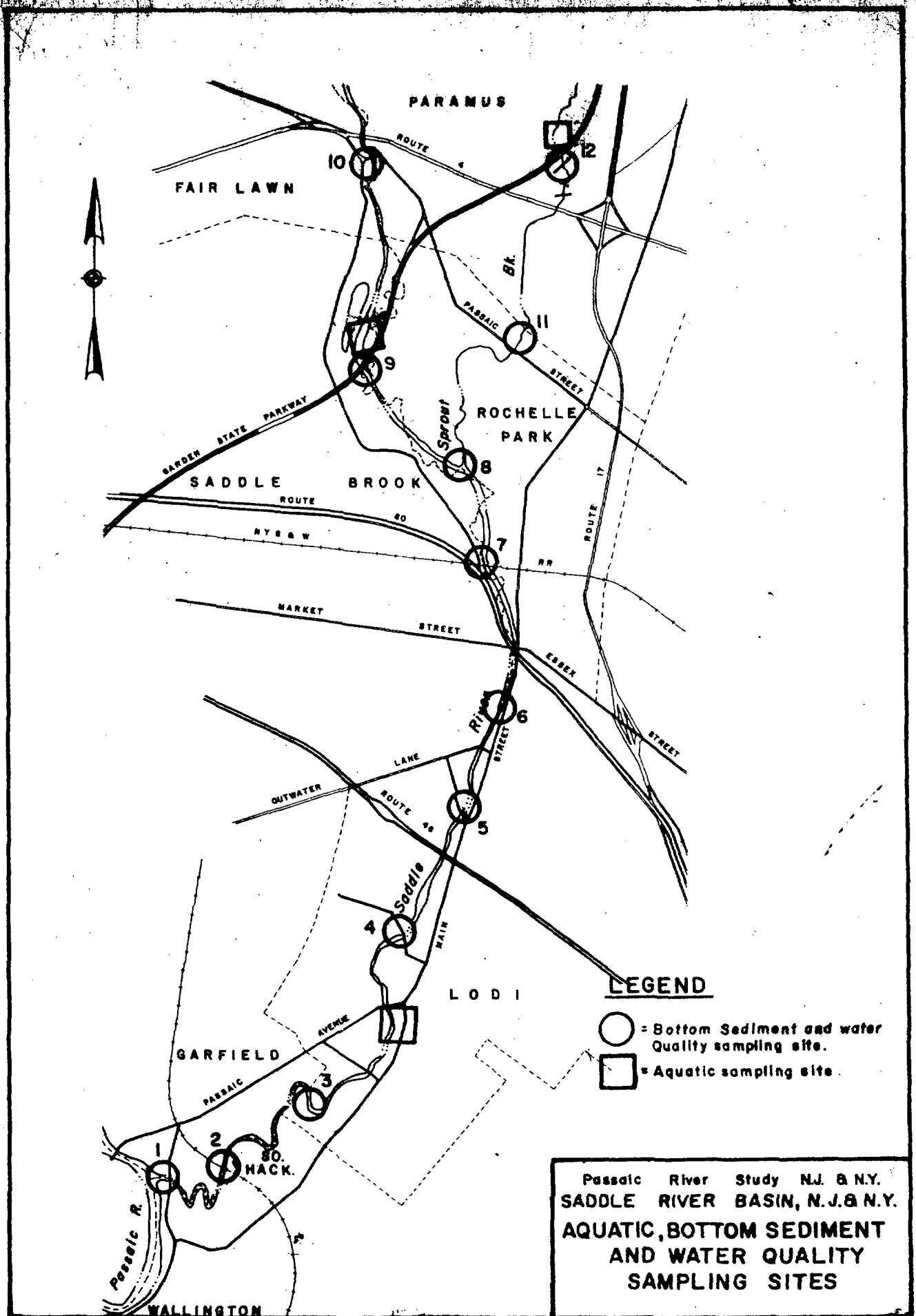
**SEDIMENT SAMPLING  
LOCATIONS**

SCALE: AS SHOWN

JANUARY 1998

FILE: SEDIMENT 94039 T5

**FIGURE 6**



**TABLE VII**  
**SADDLE RIVER SEDIMENT TESTING RESULTS: PCBs & TOC**  
**HEXCEL FACILITY**  
**LODI, NEW JERSEY**

Sample ID	S-1	S-1	S-2	S-2	S-3	S-3	S-4	S-4	S-5	S-5	S-6	S-6	S-7	S-7	FIELD BLANK*	
Sample Date	10/10/97	10/10/97	10/10/97	10/10/97	10/10/97	10/10/97	10/10/97	10/10/97	10/10/97	10/10/97	10/10/97	10/10/97	10/10/97	10/10/97	10/10/97	
Sample Depth	0 to 6"	6 to 12"	0 to 6"	6 to 12"	0 to 6"	6 to 12"	0 to 6"	6 to 12"	0 to 6"	6 to 12"	0 to 6"	6 to 12"	0 to 6"	6 to 12"	10/10/97	
Collected By:	H&A	H&A	H&A	H&A	H&A	H&A	H&A	H&A	H&A	H&A	H&A	H&A	H&A	H&A	H&A	
Laboratory ID	274170	274171	274172	274173	274175	274174	274176	274177	274178	274179	274180	274181	274182	274183	274050	
Units	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL
PCBs																
Aroclor-1016	ug/Kg	— 63	— 6200	— 59	— 59	— 58	— 58	— 60	— 64	— 59	— 58	— 62	— 59	— 67	— 64	— 1
Aroclor-1221	ug/Kg	— 120	— 12000	— 120	— 12	— 12	— 12	— 120	— 130	— 120	— 120	— 120	— 120	— 130	— 130	— 2
Aroclor-1232	ug/Kg	— 63	— 6200	— 59	— 59	— 58	— 58	— 60	— 64	— 59	— 58	— 62	— 59	— 67	— 64	— 1
Aroclor-1242	ug/Kg	2700	300000	550	2500	130	47 J	560	1100	— 59	— 58	— 62	— 59	— 130	— 64	— 1
Aroclor-1248	ug/Kg	— 63	— 6200	— 59	— 59	— 58	— 58	— 60	— 64	— 59	— 58	— 62	— 59	— 67	— 64	— 1
Aroclor-1254	ug/Kg	— 63	— 6200	— 59	— 59	— 58	— 58	— 60	— 64	— 59	— 58	— 62	— 59	— 67	— 64	— 1
Aroclor-1260	ug/Kg	— 63	— 6200	— 59	— 59	— 58	— 58	— 60	— 64	— 59	— 58	— 62	— 59	— 67	— 64	— 1
Total PCBs	ug/Kg	2700	300000	550	2500	130	47 J	560	1100	—	—	—	—	—	—	—
TOC																
mg/Kg	898	584	1410	708	453	656	964	460	857	325	367	737	1080	918	—	1

Sample ID		SDSR-SS01		SDSR-SS02		P-1		P-2		P-3		SED-UP		SED-DOWN		Site#1		Site#2		Site#3		Site#4		Site#5		Site#6		Site#7		Site#8	
Sample Date		Jun-87		Jun-87		9/27/96		9/27/96		9/27/96		4/28/95		4/28/95		Dec-83		Dec-83		Dec-83		Dec-83		Dec-83		Dec-83		Dec-83		Dec-83	
Sample Depth		0 TO 6"		0 TO 6"		0 TO 6"		0 TO 6"		0 TO 6"		0 TO 6"		0 TO 6"		Army Corps		Army Corps		Army Corps		Army Corps		Army Corps		Army Corps		Army Corps		Army Corps	
Collected By:		ENVRON		ENVRON		ENSR		ENSR		ENSR		ENSR		ENSR		Army Corps		Army Corps		Army Corps		Army Corps		Army Corps		Army Corps		Army Corps		Army Corps	
Laboratory ID		63789		63789		63789		63790		63791		23861		23862																	
	Units	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL														
PCBs																															
Aroclor-1016	ug/Kg																														
Aroclor-1221	ug/Kg																														
Aroclor-1232	ug/Kg																														
Aroclor-1242	ug/Kg																														
Aroclor-1248	ug/Kg																														
Aroclor-1254	ug/Kg																														
Aroclor-1260	ug/Kg																														
Total PCBs	ug/Kg	300		2400		160		81		83		200		--		20		80		370		80		40		--		110		210	
TOC																															
	mg/Kg											7450		6570		11073		8907		7989		5176		8345		15240		14147		27174	

**Notes:**

Samples S-1 through S-8 were collected by Haley & Aldrich, Inc. for Hexcel Corp.

Samples SDSR-SS01 and SDSR-SS02 were collected by Environ for Hexcal Corp. (Reference: *Summary Report of Preliminary Environmental Sampling at the Fine Organics Corp., Oct 1987*)

Samples P-1 through P-3 were collected by ENSR for Napp Technologies, Inc. (Reference: *Remedial Investigation Report/Remedial Investigation Workplan Addendum, June 1997*)

Samples SED-UP and SED-DOWN were collected by ENSR for Napp Technologies, Inc. (Reference: *Figure C-3, Remedial Investigation Report, Feb. 1996*)

Samples Site#1 through Site#8 were collected by the U.S. Army Corps of Engineers (Reference: *Interim Report on Flood Protection Feasibility Lower Saddle River, Bergen Co, N.J., Aug 1984*)

J: Estimated Concentration.

\*: The reporting units for the H&A Field Blank collected on 10/10/97 are ug/L for PCBs and mg/L for TOC.

Blank spaces for testing results indicate that the data is not available.

—: The compound was not detected. The laboratory method detection limit (MDL), if available, is provided next to the testing result.

**TABLE VIII**  
**SEDIMENT QUALITY GUIDELINES**  
**HEXCEL FACILITY**  
**LODI, NEW JERSEY**

Sample ID		S-1	S-1	S-2	S-2	S-3	S-3	S-4	S-4
Sample Date		10/10/97	10/10/97	10/10/97	10/10/97	10/10/97	10/10/97	10/10/97	10/10/97
Sample Depth		0 to 6"	6 to 12"	0 to 6"	6 to 12"	0 to 6"	6 to 12"	0 to 6"	6 to 12"
Laboratory ID		274170	274171	274172	274173	274175	274174	274176	274177
TOC	%	0.09%	0.06%	0.14%	0.07%	0.05%	0.07%	0.10%	0.05%
No Effect Level	ppm	0.000009	0.000006	0.000014	0.000007	0.000005	0.000007	0.000010	0.000005
Lowest Effect Level	ppm	0.000063	0.000041	0.000099	0.000050	0.000032	0.000046	0.000067	0.000032
Severe Effect Level	ppm	0.474880	0.309520	0.747300	0.375240	0.240090	0.347680	0.510920	0.243800
Total PCBs	ppm	0.760	0.510	0.55	0.57	0.13	0.05	0.51	0.82

Sample ID		S-5	S-5	S-6	S-6	S-7	S-7
Sample Date		10/10/97	10/10/97	10/10/97	10/10/97	10/10/97	10/10/97
Sample Depth		0 to 6"	6 to 12"	0 to 6"	6 to 12"	0 to 6"	6 to 12"
Laboratory ID		274178	274179	274180	274181	274182	274183
TOC	%	0.09%	0.03%	0.04%	0.07%	0.11%	0.09%
No Effect Level	ppm	0.000009	0.000003	0.000004	0.000007	0.000011	0.000009
Lowest Effect Level	ppm	0.000060	0.000023	0.000026	0.000052	0.000076	0.000064
Severe Effect Level	ppm	0.454210	0.172250	0.194510	0.390610	0.572400	0.486540
Total PCBs	ppm	---	---	---	---	---	---

**Notes:**

- Reference is *Guidelines for the Protection and Management of Aquatic Sediment Quality in Ontario*, January 1996, by the Canadian Ministry of the Environment (MOE)
- No Effect Level Concentration at which the chemicals in the sediment do not affect fish or sediment-dwelling organisms.
- Lowest Effect Level Concentration at which the chemicals in the sediment have no affect on the majority of sediment-dwelling organisms. The Lowest Effect Level is calculated by multiplying the total organic carbon content of the sample by the 5th percentile of the Screening Level Concentration, (0.07 ppm) as provided in Table 2a of the Guidelines for the Protection.....Sediment Quality.
- Severe Effect Level Concentration at which the chemicals in the sediment are likely to affect the health of the majority of sediment-dwelling organisms. The Severe Effect Level is calculated by multiplying the total organic carbon content of the sample by the 95th percentile of the Screening Level Concentration, (530 ppm) as provided in Table 2a of the Guidelines for the Protection.....Sediment Quality.

Result exceeds the Severe Effect Level for total PCBs

0.55

Result exceeds the Lowest Effect Level but is less than the Severe Effect Level for total PCBs

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January 1998



## **Appendix H**

### **Schedule Estimates**

**Table IX: Estimated Schedule of Remaining Remedial Activities**

**TABLE IX****ESTIMATED SCHEDULE OF REMAINING REMEDIAL ACTIVITIES  
HEXCEL FACILITY  
LODI, NEW JERSEY**

1998

TASK DESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12
<b>GROUND WATER REMEDIATION</b>												
DNAPL/LNAPL recovery (temporary)												
Recover water from basement of Bldg. 1												
Reevaluate ground water remedial plans *												
Prep. design proposal for recov. sys. *												
NJDEP review of design proposal *												
Install permanent recovery system *												
Operate and maintain recovery system *												
<b>CLEANING OF SEWER LINE</b>												
Cleanout/abandonment of sewer line *												
Collect samples (and lab. analysis) *												
Disposal of sludge/debris *												
<b>SOIL REMEDIATION</b>												
Reevaluate soil remedial plans *												
<b>SEDIMENT SAMPLING</b>												
Reevaluate need for additional sampling *												
<b>REPORTING</b>												
Prepare quarterly progress reports												
Prepare final report *												
NJDEP review and site inspection *												
Case closure *												

\* Timing is dependent on availability of regional information.

File: L:\94\94039\progrpt\sched6.xls

January 1998

INDUSTRIAL CORROSION MANAGEMENT, INC.  
1152 Route 10  
Randolph, NJ 07869  
201-584-0330

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S-1 6-12"	Lab #274171
S-2 0-6"	Lab #274172
S-2 6-12"	Lab #274173
S-3 6-12"	Lab #274174
S-3 0-6"	Lab #274175
S-4 0-6"	Lab #274176
S-4 6-12"	Lab #274177
S-5 0-6"	Lab #274178
S-5 6-12"	Lab #274179
S-6 0-6"	Lab #274180
S-6 6-12"	Lab #274181
S-7 0-6"	Lab #274182
S-7 6-12"	Lab #274183
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882370059

ICM Laboratories  
Industrial Corrosion Management, Inc.  
1152 Route 10  
Randolph, NJ 07869  
Phone: 201-584-0330 FAX: 201-584-0515

NOVEMBER 4, 1997  
18:20:08

ANALYTICAL DATA SUMMARY REPORT

Client: GEO ENGINEERING  
Source: HEXCEL

Client ID FIELD BLANK  
ICM Sample Number 274050  
Sampling Date 10/10/97  
Units UG/L

PCBS  
Aroclor-1016 1.0 U  
Aroclor-1221 2.0 U  
Aroclor-1232 1.0 U  
Aroclor-1242 1.0 U  
Aroclor-1248 1.0 U  
Aroclor-1254 1.0 U  
Aroclor-1260 1.0 U

000 3

882370060

ICM Laboratories  
Industrial Corrosion Management, Inc.  
1152 Route 10  
Randolph, NJ 07869  
Phone: 201-584-0330 FAX: 201-584-0515

OCTOBER 31, 1997  
15:50:24

ANALYTICAL DATA SUMMARY REPORT

Client:  
GEO ENGINEERING  
Source:  
H Excel

Client ID	S-1 0-6"	S-1 6-12"	S-2 0-6"	S-2 6-12"	S-3 6-12"	S-3 0-6"	S-4 0-6"	S-4 6-12"	S-5 0-6"
ICM Sample Number	274170	274171	274172	274173	274174	274175	274176	274177	274178
Sampling Date	10/10/97	10/10/97	10/10/97	10/10/97	10/10/97	10/10/97	10/10/97	10/10/97	10/10/97
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
PCBs									
Aroclor-1016	63	6200	59	59	58	58	60	64	59
Aroclor-1221	120	12000	120	120	120	120	120	130	120
Aroclor-1232	63	6200	59	59	58	58	60	64	59
Aroclor-1242	2700	300000	550	2500	47	130	560	1100	59
Aroclor-1248	63	6200	59	59	58	58	60	64	59
Aroclor-1254	63	6200	59	59	58	58	60	64	59
Aroclor-1260	63	6200	59	59	58	58	60	64	59

CC



ICM Laboratories  
Industrial Corrosion Management, Inc.  
1152 Route 10  
Randolph, NJ 07869  
Phone: 201-584-0330 FAX: 201-584-0515

OCTOBER 31, 1997  
15:50:33

ANALYTICAL DATA SUMMARY REPORT

Client:  
GEO ENGINEERING  
Source:  
H Excel

Client ID	S-5 6-12"	S-6 0-6"	S-6 6-12"	S-7 0-6"	S-7 6-12"
ICM Sample Number	274179	274180	274181	274182	274183
Sampling Date	10/10/97	10/10/97	10/10/97	10/10/97	10/10/97
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
PCBs					
Aroclor-1016	58	62	59	67	64
Aroclor-1221	120	120	120	130	130
Aroclor-1232	58	62	59	67	64
Aroclor-1242	58	62	59	67	64
Aroclor-1248	58	62	59	67	64
Aroclor-1254	58	62	59	67	64
Aroclor-1260	58	62	59	67	64

000 5

882370062

ICM Laboratories  
Industrial Corrosion Management, Inc.  
1152 Route 10  
Randolph, NJ 07869  
Phone: 201-584-0330 FAX: 201-584-0515

NOVEMBER 4, 1997  
18:20:10

ANALYTICAL DATA SUMMARY REPORT

Client:  
GEO ENGINEERING  
Source:  
HEXCEL

Client ID FIELD BLANK  
ICM Sample Number 274050  
Sampling Date 10/10/97  
Units MG/L

GENERAL CHEMISTRY/MICRO PARAMETERS

TOC 1.0 U

000

6

882370063

ICM Laboratories  
Industrial Corrosion Management, Inc.  
1152 Route 10  
Randolph, NJ 07869  
Phone: 201-584-0330 FAX: 201-584-0515

OCTOBER 31, 1997  
15:50:30

ANALYTICAL DATA SUMMARY REPORT

Client:  
GEO ENGINEERING  
Source:  
H Excel

Client ID	S-1 0-6"	S-1 6-12"	S-2 0-6"	S-2 6-12"	S-3 0-6"	S-3 6-12"	S-4 0-6"	S-4 6-12"	S-5 0-6"
ICM Sample Number	274170	274171	274172	274173	274174	274175	274176	274177	274178
Sampling Date	10/10/97	10/10/97	10/10/97	10/10/97	10/10/97	10/10/97	10/10/97	10/10/97	10/10/97
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
GENERAL CHEMISTRY/MICRO PARAMETERS	896	584	1410	708	656	453	964	460	857
TOC									

882370064



ICM Laboratories  
Industrial Corrosion Management, Inc.  
1152 Route 10  
Randolph, NJ 07869  
Phone: 201-584-0330 FAX: 201-584-0515

OCTOBER 31, 1997  
15:50:38

ANALYTICAL DATA SUMMARY REPORT

Client:  
GEO ENGINEERING  
Source:  
H Excel

Client ID	S-5 6-12"	S-6 0-6"	S-6 6-12"	S-7 0-6"	S-7 6-12"
ICM Sample Number	274179	274180	274181	274182	274183
Sampling Date	10/10/97	10/10/97	10/10/97	10/10/97	10/10/97
Units	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
GENERAL CHEMISTRY/MICRO PARAMETERS	325	367	737	1080	918
TOC					

882370065

## INDUSTRIAL CORROSION MANAGEMENT, Inc.

1152 Route 10

Randolph, NJ 07869

201-584-0330

November 5, 1997

Certified for: NJ, PA, DE, CT, NY(DOH)

NJ #14116 NY #11376

US EPA CLP Lab

## ANALYTICAL DATA REPORT PACKAGE

Client: GEO ENGINEERING

Sampled By: Customer

SAMPLE ID:	MATRIX	LAB NUMBER	DATE & TIME COLLECTED	AT LAB DATE
S-1 0-6"	Soil	274170	10/10/97 09:00	10/13/97
S-1 6-12"	Soil	274171	10/10/97 09:00	10/13/97
S-2 0-6"	Soil	274172	10/10/97 10:00	10/13/97
S-2 6-12"	Soil	274173	10/10/97 10:00	10/13/97
S-3 6-12"	Soil	274174	10/10/97 10:45	10/13/97
S-3 0-6"	Soil	274175	10/10/97 10:45	10/13/97
S-4 0-6"	Soil	274176	10/10/97 11:45	10/13/97
S-4 6-12"	Soil	274177	10/10/97 11:45	10/13/97
S-5 0-6"	Soil	274178	10/10/97 13:30	10/13/97
S-5 6-12"	Soil	274179	10/10/97 13:30	10/13/97
S-6 0-6"	Soil	274180	10/10/97 14:45	10/13/97
S-6 6-12"	Soil	274181	10/10/97 14:45	10/13/97
S-7 0-6"	Soil	274182	10/10/97 15:25	10/13/97
S-7 6-12"	Soil	274183	10/10/97 15:25	10/13/97

Supervisor/Manager Signature:



Richard S. Levine

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All rights reserved.

JOA

INDUSTRIAL CORROSION MANAGEMENT, INC  
1152 Route 10  
Randolph, NJ 07869  
Phone: 973-584-0330 FAX: 973-584-0515

THIS FORM MUST BE COMPLETED BY THE LABORATORY OR  
ENVIRONMENTAL CONSULTANT AND ACCOMPANY ALL DATA SUBMISSIONS

The following laboratory deliverables shall be included in the data submissions. All deviations from the accepted methodology and procedures or performance values outside acceptable ranges shall be summarized in the Non-Conformance statement. The NJDEP "Technical Requirements for Site Remediation" rules, effective June 7, 1993 and readopted February 18, 1997 (operative date - July 18, 1997), provides further details. The document shall be bound and paginated, contain a table of contents, and all pages shall be legible. Incomplete packages will be returned or held without review until the data package is completed.

It is recommended that the analytical results & summary sheets listing all targeted and non-targeted compounds with the method detection limits be included in one section of the data package and in the main body of the report.

	Check if Complete
1. Cover Page, Title Page listing Lab Certification #, facility name & address, and date of report	<input checked="" type="checkbox"/>
2. Table of Contents	<input checked="" type="checkbox"/>
3. Summary Sheets listing analytical results for all targeted and non-targeted compounds	<input checked="" type="checkbox"/>
4. Summary Table cross-referencing field ID #'s vs. Lab ID #'s.	<input checked="" type="checkbox"/>
5. Document bound, paginated and legible	<input checked="" type="checkbox"/>
6. Chain of Custody	<input checked="" type="checkbox"/>
7. Methodology Summary	<input checked="" type="checkbox"/>
6. Laboratory Chronicle and Holding Time Check	<input checked="" type="checkbox"/>
9. Results submitted on a dry weight basis (if applicable)	<input checked="" type="checkbox"/>
10. Method Detection Limits	<input checked="" type="checkbox"/>
11. Lab certified by NJDEPE for parameters or appropriate category of parameters or a member of the USEPA CLP	<input checked="" type="checkbox"/>
12. Non-Conformance Summary	<input checked="" type="checkbox"/>

Robin Jetter  
ICM LABORATORIES  
Quality Assurance Officer

11/04/97  
Date

NJ Certification #14116

<b>Client:</b> <u>GEO Engineering</u> <b>Address:</b> <u>150 Mineral Spring</u> <u>DOVER, NJ</u> <b>Phone #:</b> <u>973 361 3600</u> <b>Project:</b> <u>HEXCEL</u> <b>Project Mgr:</b> <u>Jon Bull</u> <b>Invoice to:</b> <u>Jon Bull</u> <b>Report to:</b> <u>Jon Bull</u> <b># Copies:</b> <u>2</u> <u>Bundled/Unbundled</u> <u>1 of each</u>	<b>Deliverables:</b> <input checked="" type="checkbox"/> NJ Reduced (Non CLP) <input type="checkbox"/> NJ Regulatory <input type="checkbox"/> Reduced (CLP) <input type="checkbox"/> Full (CLP) <input type="checkbox"/> NPDES <input type="checkbox"/> PA: <input type="checkbox"/> Std. <input type="checkbox"/> Reduced I <input type="checkbox"/> NY: <input type="checkbox"/> ASPA <input type="checkbox"/> ASPB <input type="checkbox"/> CLP <input type="checkbox"/> State Specific: _____ <input type="checkbox"/> Results Only	<b>Turnaround Required:</b> Fax Preliminary: <u>YES</u> Hard Copy: <u>Standard</u>
	<b>SRP Diskette:</b> Yes <input type="checkbox"/> No <input type="checkbox"/> <b>SRP #:</b> _____	<b>Additional Information:</b> <input type="checkbox"/> State Forms Required <input type="checkbox"/> NJ Cleanup Levels Required <input type="checkbox"/> NJ Groundwater Quality Stds. Required <input type="checkbox"/> State Specific Levels Required: _____
		<b>Expected Sample Concentration:</b> High <input type="checkbox"/> Medium <input type="checkbox"/> Low <input type="checkbox"/> Known Hazard: _____

[illegible]

**Samples have been collected, preserved & handled in accordance with NJAC 7:18**

Sampled by: <u>Jon Bull</u>	Date/Time: <u>10/10/97</u>
Relinquished by: <u>A. Smith</u>	Date/Time: <u>10/10/97 12:50</u>
Received by: <u>Jon Bull</u>	Date/Time: <u>10/10/97 12:50</u>
Relinquished by: <u>Jon Bull</u>	Date/Time: <u>10/10/97 13:40</u>
Received by: <u>A. Smith</u>	Date/Time: <u>10/10 13:40</u>
Relinquished by: _____	Date/Time: _____
Received by: _____	Date/Time: _____

Comments: ✓ ILE Preservation  
NOTE: THIS EB IS FOR Q11 SAMPLES  
Collected on 10/10/97 for THIS TOB; These will be PCK'd up by  
 If analysis is for informational purposes only, please sign the following: ICM on 10/10/97  
 "Analysis is for informational purposes, not to be used for compliance or regulatory purposes."  
 Cooler Temp: 2.9°C Condition: Intact/Broken/Leaking  
 Custody Seals: Present Absent Seal #:

**882370068**

# Chain of Custody

NJ Certification #14116

Page 1 of 2

<b>Client:</b> <u>GEO Engineering</u> <b>Address:</b> <u>150 Mineral Spring Rd</u> <u>PO Box, NJ</u> <b>Phone #:</b> <u>361 3600</u> <b>Project:</b> <u>HExcel</u> <b>Project Mgr:</b> <u>Jon Bull</u> <b>Invoice to:</b> <u>Jon Bull</u> <b>Report to:</b> <u>Jon Bull</u> <b># Copies:</b> <u>2</u> Bound/Unbound <u>1 OF EACH</u>	<b>Deliverables:</b> <input checked="" type="checkbox"/> NJ Reduced (Non CLP) <input type="checkbox"/> NJ Regulatory <input type="checkbox"/> Reduced (CLP) <input type="checkbox"/> Full (CLP) <input type="checkbox"/> NPDES <input type="checkbox"/> PA: <input type="checkbox"/> Std. <input type="checkbox"/> Reduced I <input type="checkbox"/> NY: <input type="checkbox"/> ASPA <input type="checkbox"/> ASPB <input type="checkbox"/> CLP <input type="checkbox"/> State Specific: <input type="checkbox"/> Results Only	<b>Turnaround Required:</b> <b>Fax Preliminary:</b> <u>Yes</u> <b>Hard Copy:</b> <u>Standard</u> <b>Additional Information:</b> <input type="checkbox"/> State Forms Required <input type="checkbox"/> NJ Cleanup Levels Required <input type="checkbox"/> NJ Groundwater Quality Stds. Required <input type="checkbox"/> State Specific Levels Required:
	<b>SRP Diskette:</b> Yes <input type="checkbox"/> No <input type="checkbox"/> <b>SRP #:</b>	<b>Expected Sample Concentration:</b> High <input type="checkbox"/> Medium <input type="checkbox"/> Low <input type="checkbox"/> <b>Known Hazard:</b>

Lab #	Sample Identification	Sample Date/Time	Compos	G	S	A	O	#	Analysis/Method/Pollutant List										Preservation:				
									PLBs	TOL									H2SO4	HNO3	HCl	NaOH	Other
274170	S-1 0-6"	10/10/97 900		X			X	2	✓	✓													X
274171	S-1 6-12"	900		X			X	2	✓	✓													X
274172	S-2 0-6"	1000		X			X	2	✓	✓													X
274173	S-2 6-12"	1000		X			X	2	✓	✓													X
274174	S-3 6-12"	1045		X			X	2	✓	✓													X
274175	S-3 0-6"	1045		X			X	2	✓	✓													X
274176	S-4 0-6"	1145		X			X	2	✓	✓													X
274177	S-4 6-12"	1145		X			X	2	✓	✓													X
274178	S-5 0-6"	1330		X			X	2	✓	✓													X
274179	S-5 6-12"	10/10/97 1330		X			X	2	✓	✓													X

Samples have been collected, preserved & handled in accordance with NJAC 7:18 <b>Sampled by:</b> <u>Jon Bull</u> <b>Date/Time:</b> <u>10/10/97</u> <b>Relinquished by:</b> <u>Jon Bull</u> <b>Date/Time:</b> <u>10/13/97 945</u> <b>Received by:</b> <u>Jon Bull</u> <b>Date/Time:</b> <u>10-13-97 945</u> <b>Relinquished by:</b> <u>Jon Bull</u> <b>Date/Time:</b> <u>10-13-97 1040</u> <b>Received by:</b> <u>C. Bull</u> <b>Date/Time:</b> <u>10-13-97 1040</u> <b>Relinquished by:</b> <u>Jon Bull</u> <b>Date/Time:</b> <u>10-13-97 1040</u> <b>Received by:</b> <u>Jon Bull</u> <b>Date/Time:</b> <u>10-13-97 1040</u>		<b>Comments:</b> <u>* Field Blank Completed on 10/10/97 &amp; Picked-up By ICM on 10/10/97 under a Sep. Cleanup Contract. Samples on ICE.</u> <b>If analysis is for informational purposes only, please sign the following:</b> <u>"Analysis is for informational purposes, not to be used for compliance or regulatory purposes."</u> <b>Cooler Temp:</b> <u>5.2°C</u> <b>Condition:</b> <u>Intact</u> <b>Broken/Leaking:</b> <input type="checkbox"/> <b>Custody Seals:</b> <u>Present</u> <b>Absent:</b> <input checked="" type="checkbox"/> <b>Seal #:</b>
--	--	--

882370069

Thy 2052

## NJ Certification #14116

**Deliverables:**

☒ NJ Reduced (Non CLP)

☐ NJ Regulatory

☐ Reduced (CLP) ☐ Full (CLP)

☐ NPDES

☐ PA; ☐ Std. ☐ Reduced I

☐ NY; ☐ ASPA ☐ ASPB ☐ CLP

☐ State Specific: \_\_\_\_\_

☐ Results Only

**Turnaround Required:**  
**Fax Preliminary:** \_\_\_\_\_  
**Hard Copy:** \_\_\_\_\_

**Additional Information:**  
 \_\_\_ State Forms Required  
 \_\_\_ NJ Cleanup Levels Required  
 \_\_\_ NJ Groundwater Quality Stds. Required  
 \_\_\_ State Specific Levels Required:

SRP Diskette: Yes\_\_\_ No\_\_\_  
SRP #: \_\_\_\_\_

Expected Sample Concentration:  
High ☐ Medium ☐ Low ☐  
Known Hazard: ☐

[illegible]

Sampled by:	<u>[Signature]</u>	Date/Time:	<u>10/10/97</u>
Relinquished by:	<u>[Signature]</u>	Date/Time:	<u>10/13/97 945</u>
Received by:	<u>[Signature]</u>	Date/Time:	<u>10-13-97 945</u>
Relinquished by:	<u>[Signature]</u>	Date/Time:	<u>10-13-97 1040</u>
Received by:	<u>[Signature]</u>	Date/Time:	<u>10-13-97 1040</u>
Relinquished by:	<u>[Signature]</u>	Date/Time:	<u>[Signature]</u>
Received by:	<u>[Signature]</u>	Date/Time:	<u>[Signature]</u>

**If analysis is for informational purposes only, please sign the following:**  
**"Analysis is for informational purposes, not to be used for compliance or regulatory purposes."**

Cooler Temp: 5.1°C Condition: Intact Broken/Leaking  
Custody Seals: Present Absent Seal #:

GC ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

- |  | <u>NO</u> | <u>YES</u>       |
|--|-----------|------------------|
| 1. Chromatograms Labeled/Compounds Identified<br>(Field Samples and Method Blanks)   | _____     | _____/_____<br>✓ |
| 2. Standards Summary Submitted   | _____     | _____/_____<br>✓ |
| 3. Calibration - Initial Calibration performed within<br>30 days before sample analysis and continuing calibration<br>performed within 24 hours of sample analysis | _____     | _____/_____<br>✓ |
| 4. Blank Contamination - If yes, list compounds and concentrations<br>in each blank:   |           |                  |
| a. VOA Fraction _____  |           |                  |
| b. B/N Fraction _____  |           |                  |
| c. Acid Fraction _____   |           |                  |
| d. Pesticides/PCB's _____  |           |                  |
| e. Other _____   |           |                  |
| 5. Surrogate Recoveries Meet Criteria (if applicable)  | _____     | _____/_____<br>✓ |
| If not met, list those compounds and their recoveries which<br>fall outside the acceptable range:  |           |                  |
| a. VOA Fraction _____  |           |                  |
| b. B/N Fraction _____  |           |                  |
| c. Acid Fraction _____   |           |                  |
| d. Pesticides/PCB's _____  |           |                  |
| e. Other _____   |           |                  |
| If not met, were the calculations checked and the results<br>qualified as "estimated?" _____ N/A _____   |           |                  |
| 6. Matrix Spike/Matrix Spike Duplicate Recoveries Meet<br>Criteria (if applicable)   | _____     | _____/_____<br>✓ |
| (If not met, list those compounds and their recoveries<br>which fall outside the acceptable range)   |           |                  |
| a. VOA Fraction _____  |           |                  |
| b. B/N Fraction _____  |           |                  |
| c. Acid Fraction _____   |           |                  |
| d. Pesticides/PCB's _____  |           |                  |
| e. Other _____   |           |                  |
| 7. Retention Time Shift Meet Criteria (if applicable)  | _____     | _____/_____<br>✓ |

GC ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT (CONTINUED)

	<u>NO</u>	<u>YES</u>
8. Extraction Holding Time Met	_____	_____✓

If not met, list number of days exceeded for each sample: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

9. Analysis Holding Time Met	_____	_____✓
------------------------------	-------	--------

If not met, list number of days exceeded for each sample: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Additional Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Laboratory Manager: *Matthew A. Cap* Date: 11/4/97



INDUSTRIAL CORROSION MANAGEMENT, INC.  
1152 Route 10  
Randolph, NJ 07869  
201-584-0330

NJ DEP and PA DER Certified.  
NJ DEP Lab ID# 14116  
US EPA Historic CLP Lab

CONFORMANCE/NONCONFORMANCE SUMMARY CHECKLIST


Lab Numbers: 274050, 274170 - 274183

General Chemistry: Analyzed ☒ Not Analyzed ☐

All samples were analyzed within the required holding times.

Yes ☒ No ☐

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

  
Quality Assurance Coordinator

11/4/97  
Date



# Converse Consultants East

## Transmittal

3 Century Drive  
P.O. Box 265  
Parsippany, New Jersey 07054-0265  
201-605-5200  
Fax 201-605-8145

Date **October 24, 1997**

Project **97-37323-01  
Hexcel**

To  
**GEO Engineeirng  
150 Mineral Spring Drive  
Dover, NJ 07801**

Attention  
**Jonathan Bull**

We are sending you the following

☒ Enclosed  
☐ Separately  
☐ UPS

☒ Regular Mail  
☐ Special Delivery  
☐ Air Mail  
☐ Express Mail  
☐ Carrier  
☐ Fed Express

Quantity	Description
<b>7 sheets</b>	<b>Grain Size Dist. Test Report</b>

Remarks

**14 Sieve and Hydrometer tests were performed.**

Copies to

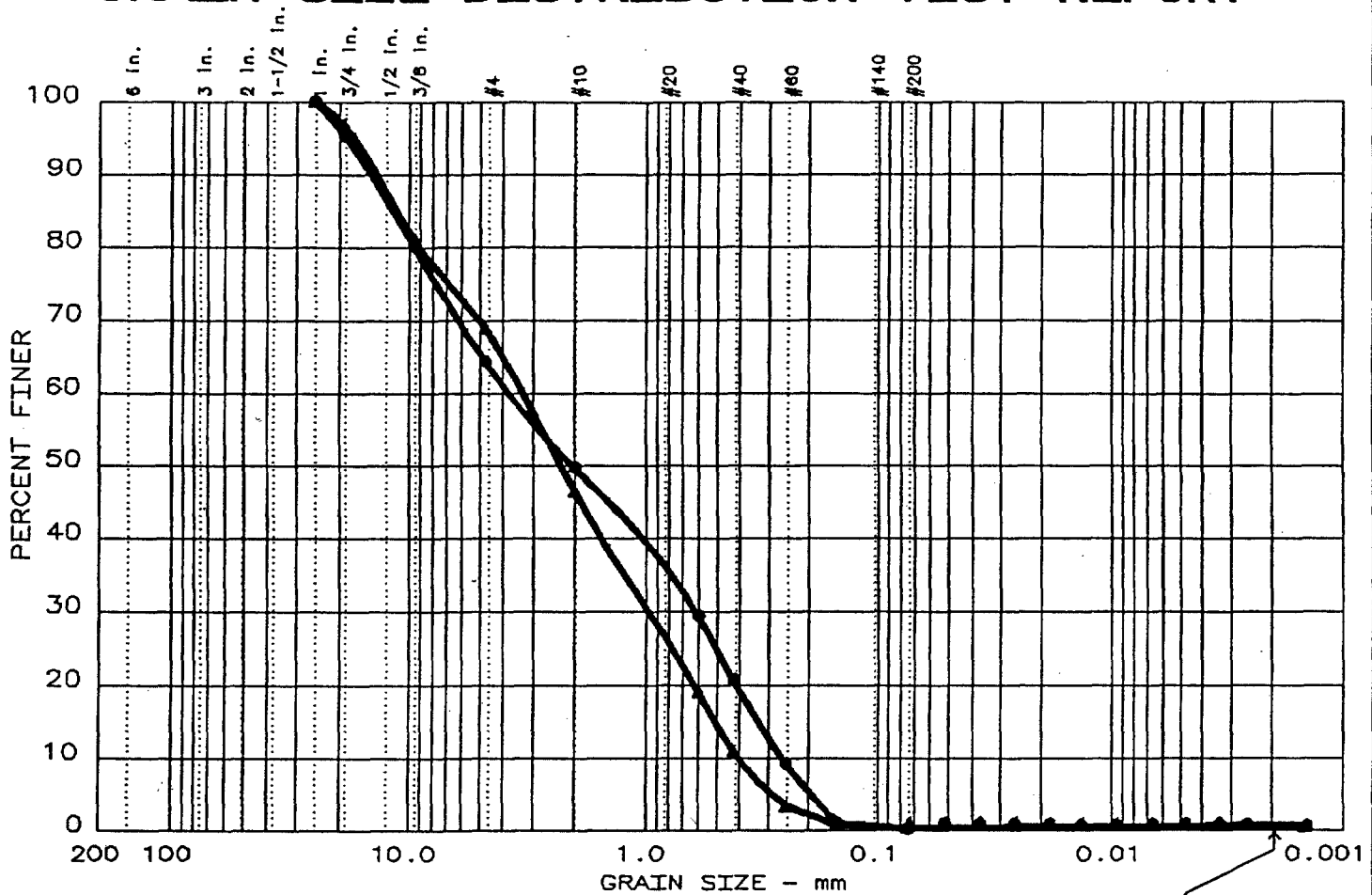
File

Sent by

**S. Sockanathan**  
**Nathan Sockanathan**

**882370074**

# GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	35.6	64.1	0.3	
▲	0.0	31.1	68.5	0.4	

	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
●			11.6	3.76	2.02	0.614	0.330	0.259	0.39	14.5
▲			11.2	3.27	2.28	0.971	0.504	0.400	0.72	8.2

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown poorly graded sand with gravel	SP	
▲ Dark Brown poorly graded sand with gravel	SP	

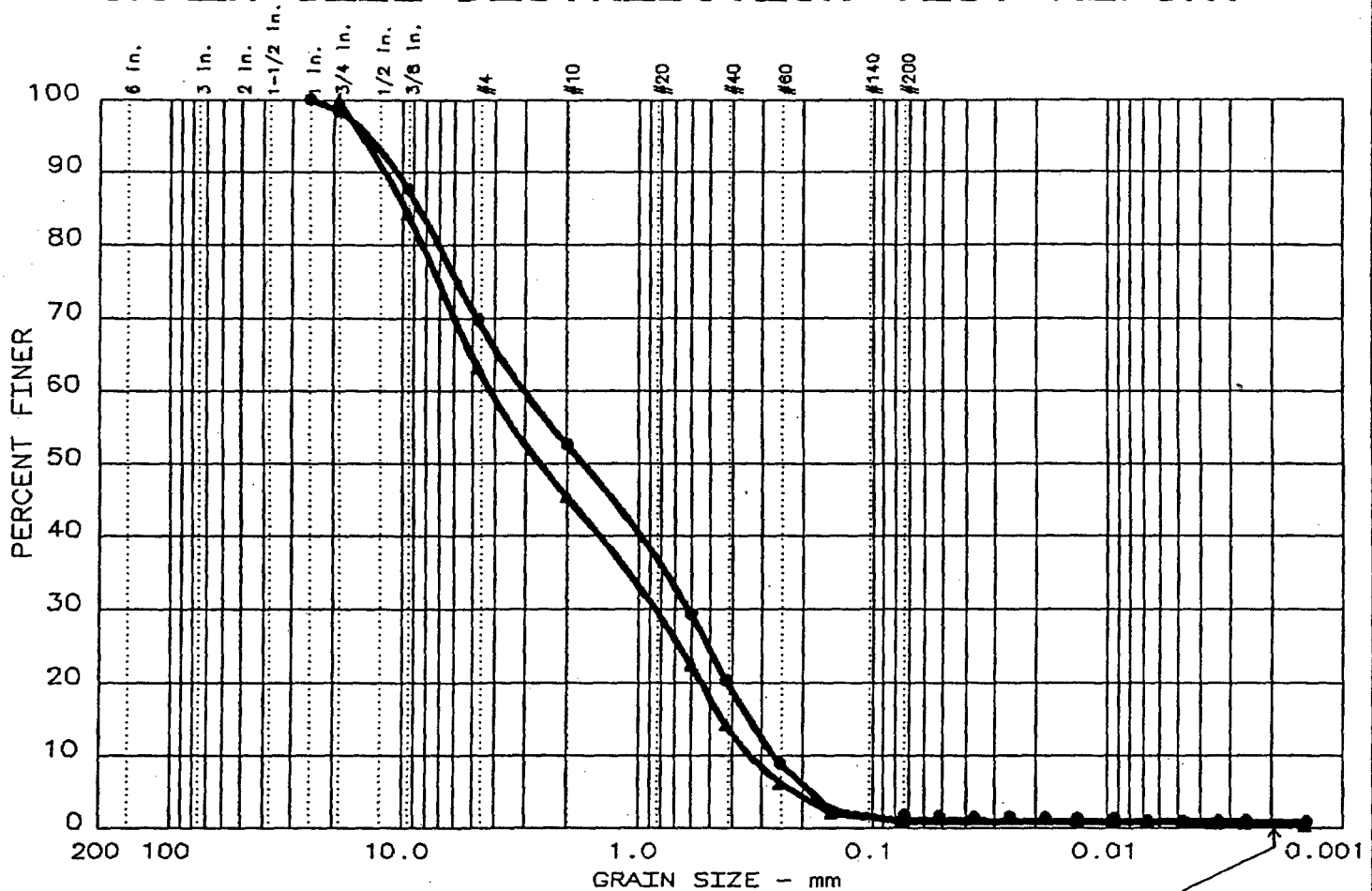
Project No.: 97-37323-01 Project: HEXCEL ● Location: S-1/0-6 inch ▲ Location: S-1/6-12 inch Date: 10-23-97	Remarks:     Figure No. _____
--	--



Converse Consultants East

882370075

# GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	30.3	68.7	0.2	0.8
▲	0.0	36.7	62.2	0.5	0.6

	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
●			8.51	3.02	1.70	0.615	0.334	0.262	0.48	11.5
▲			9.77	4.17	2.60	0.841	0.437	0.331	0.51	12.6

MATERIAL DESCRIPTION	USCS	AASHTO
● Dark Brown poorly graded sand with gravel	SP	
▲ Dark Brown poorly graded sand with gravel	SP	

Project No.: 97-37323-01  
 Project: HEXCEL  
 ● Location: S-2/0-6 inch  
 ▲ Location: S-2/6-12 inch

Date: 10-23-97



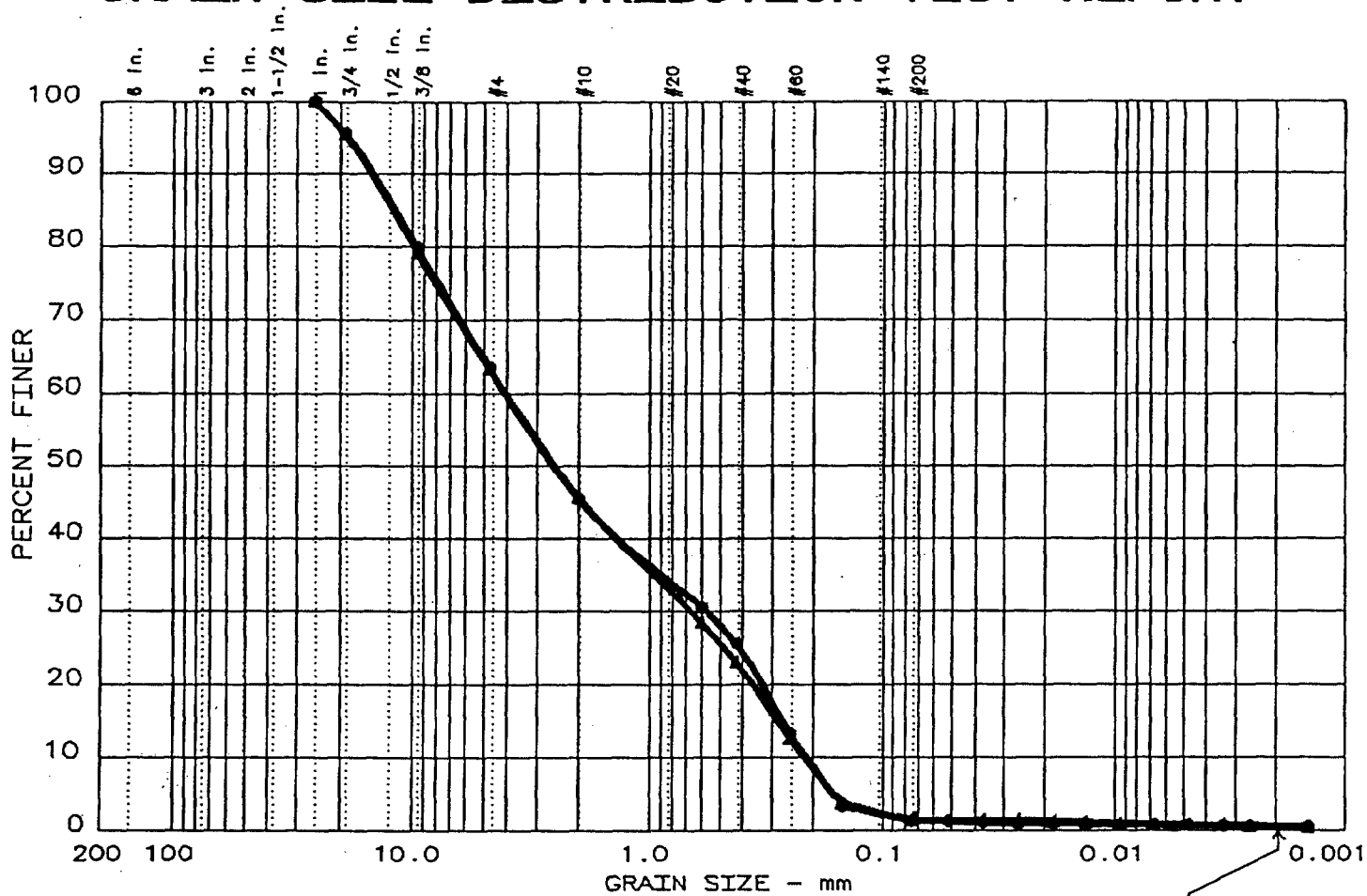
Converse Consultants East

Remarks:

Figure No. \_\_\_\_\_

882370076

# GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	36.5	62.2	0.8	0.5
▲	0.0	36.6	62.0	0.8	0.6

[illegible]

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown poorly graded sand with gravel	SP	
▲ Brown poorly graded sand with gravel	SP	

Project No.: 97-37323-01  
Project: HEXCEL  
● Location: S-3/0-6 inch  
▲ Location: S-3/6-12 inch

Date: 10-23-97



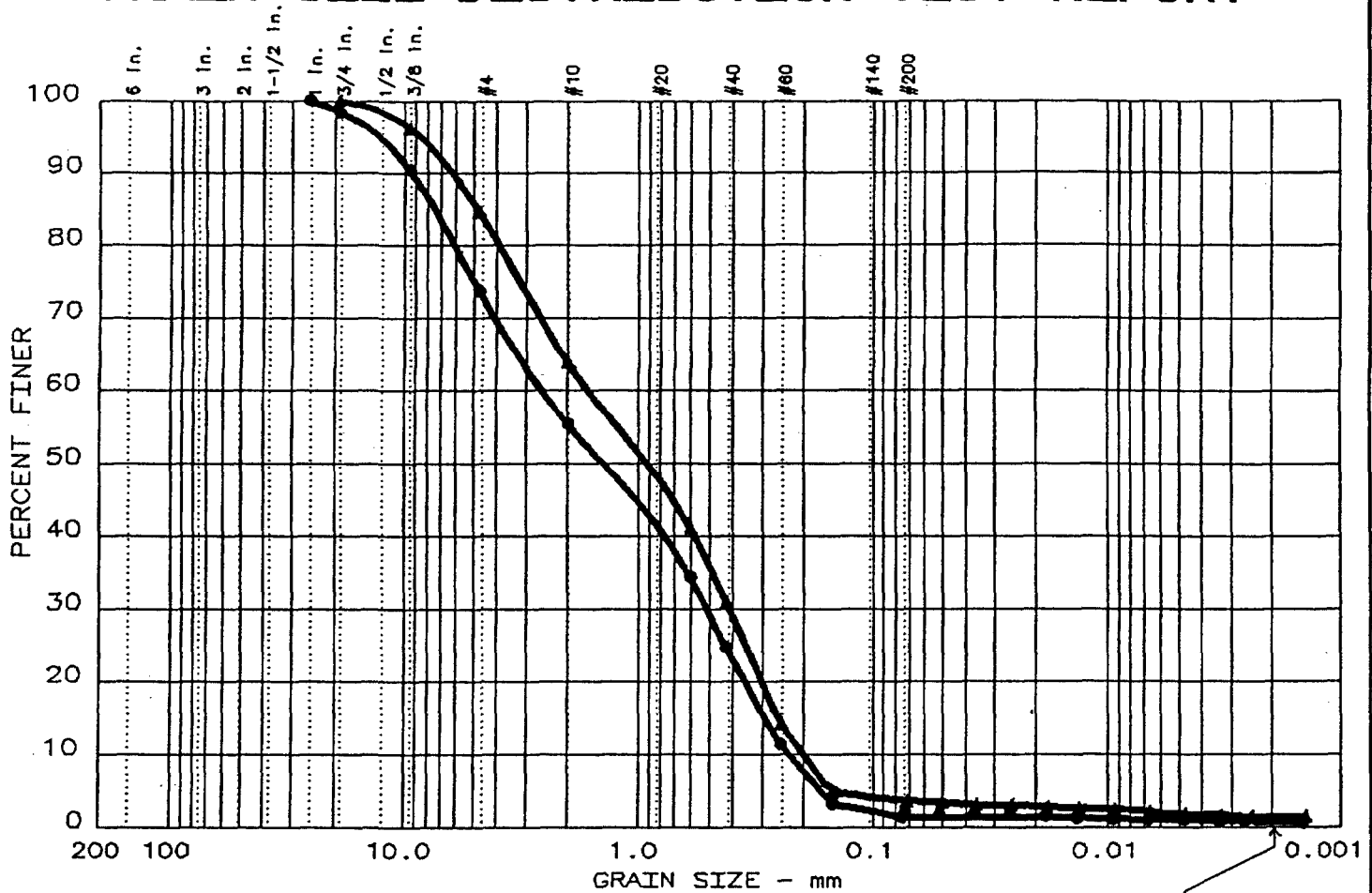
## Converse Consultants East

Remarks:

Figure No. \_\_\_\_\_

882370077

# GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	26.3	72.3	0.7	0.7
▲	0.0	15.4	80.8	2.3	1.5

	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
●			7.40	2.57	1.39	0.512	0.291	0.226	0.45	11.4
▲			4.84	1.62	0.902	0.411	0.256	0.196	0.53	8.3

MATERIAL DESCRIPTION	USCS	AASHTO
● Dark brown poorly graded sand with gravel	SP	
▲ Dark brown poorly graded sand with gravel	SP	

Project No.: 97-37323-01 Project: HEXCEL ● Location: S-4/0-6 inch ▲ Location: S-4/6-12 inch Date: 10-23-97	Remarks:          Figure No. _____
--	--



Converse Consultants East


882370078

PERCENT FINER

GRAIN SIZE - mm

200 100 10.0 1.0 0.1 0.01 0.001


6 in. 3 in. 2 in. 1 1/2 in. 1 in. 3/4 in. 1/2 in. 3/8 in. #4 #10 #20 #40 #60 #140 #200

<p>Project No.: 97-37323-01</p> <p>Project: HEXCEL</p> <p>● Location: S-5/0-6 inch</p> <p>▲ Location: S-5/6-12 inch</p> <p>Date: 10-23-97</p>	<p>Remarks:</p>
 <b>Converse Consultants East</b>	<p>Figure No. _____</p>

Grain size distribution curve showing Percent Finer versus Grain Size (mm). The curve indicates a well-graded material.

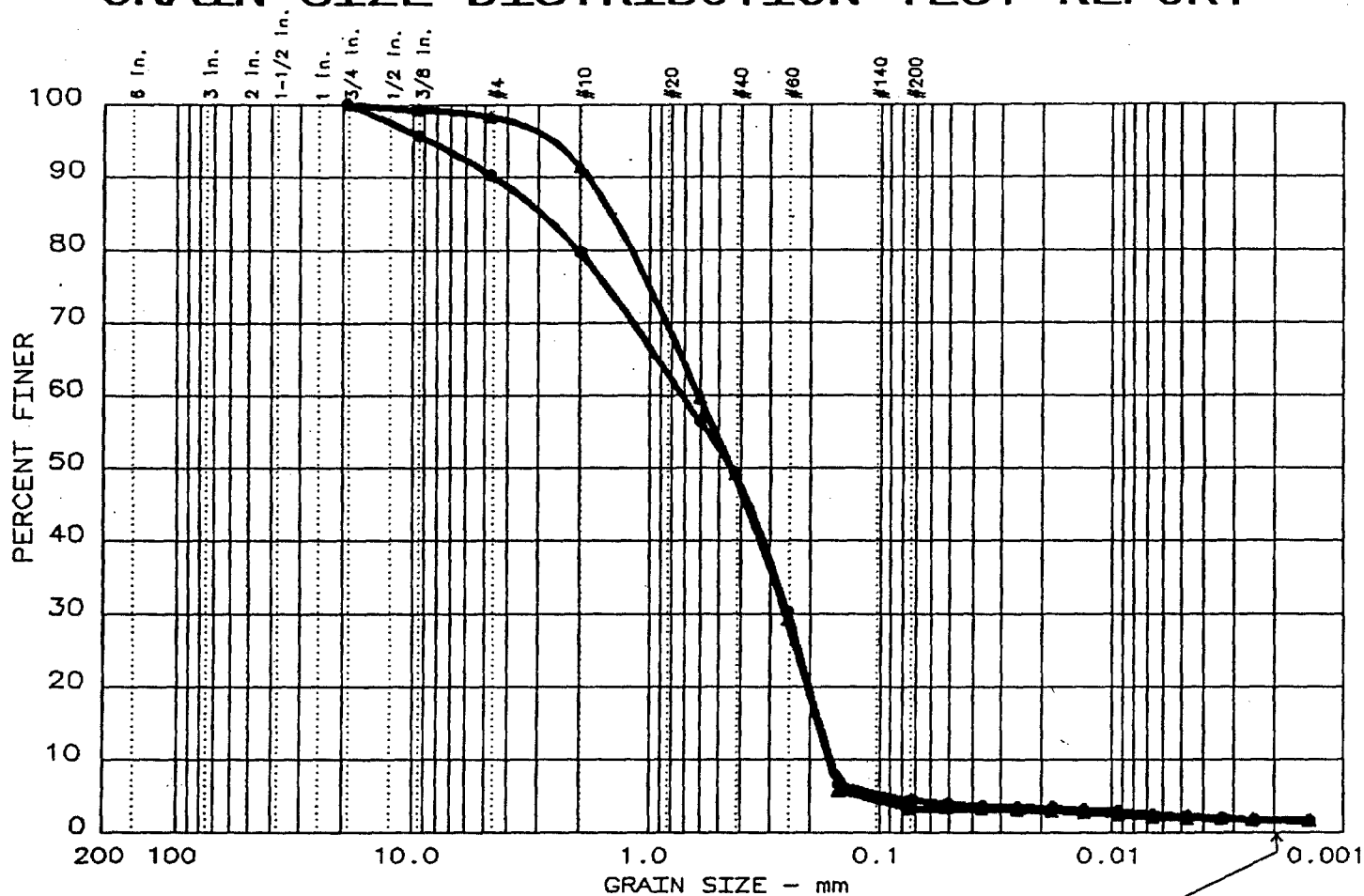
Grain Size (mm)	Percent Finer (%)
6 in.	100
3 in.	100
2 in.	100
1 1/2 in.	100
1 in.	100
3/4 in.	98
1/2 in.	95
3/8 in.	90
#4	85
#10	65
#20	45
#40	25
#60	15
#140	5
#200	2
0.075 mm	1
0.06 mm	0.5
0.05 mm	0.2
0.04 mm	0.1
0.03 mm	0.05
0.02 mm	0.02
0.01 mm	0.01
0.0075 mm	0.005
0.006 mm	0.002
0.005 mm	0.001
0.004 mm	0.0005
0.003 mm	0.0002
0.002 mm	0.0001
0.001 mm	0.00005

[illegible]

Project No.: 97-37323-01 Project: HEXCEL ● Location: S-6/0-6 inch ▲ Location: S-6/6-12 inch  Date: 10-23-97	Remarks:
 <b>Converse Consultants East</b>	Figure No. _____



# GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	0.0	9.8	85.8	2.7	1.7
▲	0.0	1.8	95.0	1.5	1.7

	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
●			2.88	0.716	0.437	0.248	0.180	0.161	0.53	4.4
▲			1.45	0.607	0.435	0.253	0.183	0.164	0.64	3.7

MATERIAL DESCRIPTION	USCS	AASHTO
● Dark brown poorly graded sand	SP	
▲ Dark brown poorly graded sand	SP	

Project No.: 97-37323-01 Project: HEXCEL ● Location: S-7/0-6 inch ▲ Location: S-7/6-12 inch Date: 10-23-97	Remarks:     Figure No. _____
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Converse Consultants East

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